The National 911 Program

NEXT GENERATION 911 INTERSTATE PLAYBOOK

CHAPTER 5

September 2021

Achieving State/Local 911 Military Interconnection Lessons Learned, Challenges and Opportunities

Planning and Implementing Civilian and Military 911 System Integration for Improved Interoperability, Response and Mutual Aid

911.gov

Pierce County

Pierce County, Washington

Joint Base Lewis-McChord

Washington State Enhanced 911 Program

Prepared: September 2021

National 911 Program Office

911.gov

CHAPTER 5
NEXT GENERATION 911 INTERSTATE PLAYBOOK

The **Next Generation 911 Interstate Playbook, Chapter 5**, focuses on a new region of the country—specifically Pierce County, Joint Base Lewis-McChord (JBLM), and the Washington State 911 Program—highlighting their collaboration and Next Generation 911 (NG911) interoperability project between civilian and military public safety answering points (PSAPs). This Chapter documents the process followed by Pierce County, Washington, to collaborate on planning and integrating JBLM 911 communications with the county 911 system, creating an interoperable regional solution for Next Generation Core Services (NGCS) and an Emergency Services Internet Protocol (IP) network (ESInet).

LESSONS LEARNED

By chronicling their processes and challenges, the lessons learned can assist other state/local/military applications to advance the transition to NG911 for both the civilian and military PSAP. The experiences of the participants are a microcosm of what other states, local jurisdictions, and military operations can expect to experience. Tools are provided to help prepare for and overcome those challenges.

HOW DOES CHAPTER 5 OF THE INTERSTATE PLAYBOOK HELP YOUR STATE, LOCAL JURISDICTION OR MILITARY OPERATION?

The successes and lessons of the Pierce County/JBLM/Washington State 911 Program experience detailed in Chapter 5 contain perspectives, insights, knowledge, and experiences that can guide other parts of the nation and be useful in paving the way for smoother NG911 transitions, improved interoperability between military and civilian technology, and more effective implementations of integrated processes.

WHAT CAN BE LEARNED ABOUT NG911 INTERCONNECTION BETWEEN THE STATE/LOCAL AND MILITARY SYSTEMS?

Follow the experiences of the participating 911 jurisdictions outlined in the Interstate Playbook to learn about effective planning practices, the lessons of collaborative decision-making with federal and military partners, and coordination models specific to military operations.

WANT TO LEARN MORE?

Chapter 5 of the Interstate Playbook would not have been possible without the leadership and assistance of Pierce County, JBLM, and the Washington State 911 Program. We thank them for their dedication to achieving integrated services for the populations they serve, and for sharing their story for the benefit of others.

For more information on the Interstate Playbook, including Chapters 1, 2, 3, and 4, visit www.911.gov, or contact the National 911 Program at nhtsa.national911@dot.gov.

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ACRONYMS

Acronyms used throughout this report are shown below.

Acronyms	
AF	Air Force
ALI	Automatic Location Information
CAD	Computer-aided Dispatch
CAMA	Centralized Automatic Message Accounting
CHE	Call-handling Equipment
CONUS	Continental United States
COOP	Continuity of Operations
CCP	Crisis Communication Plan
DISA	Defense Information Systems Agency
DoD	Department of Defense
DODI	Department of Defense Instruction
DODIN	Department of Defense Information Network
ECC	Emergency Communications Center
EMWNS	Enterprise Mass Warning and Notification System
ESInet	Emergency Services IP Network
FW	Fire Wall
FXO	Foreign Exchange Office
GIS	Geographic Information Services
IEM	Installation Emergency Management
IGSA	Inter-Governmental Service Agreement
IP	Internet Protocol
IPSR	Internet Protocol Selective Router
JAG	Judge Advocate General
JBGC	Joint Base Garrison Commander
JBLM	Joint Base Lewis-McChord
JITC	Joint Interoperability Test Command
LEC	Local Exchange Carrier
MLTS	Multi-line Telephone System

Acronyms	
MSAG	Master Street Address Guide
MOA/MOU	Memorandum of Agreement/Memorandum of Understanding
NEC	Not Elsewhere Classified
NG911	Next Generation 911
NGCS	Next Generation Core Services
NOC	Network Operations Center
OUTBRIEF	DoD term for debrief
PBX	Private Branch Exchange
PCA	PSAP Credentialing Authority
PKI	Performance Key Indicator
PRF	Policy Routing Function
PS/ALI	Private Switch/ALI
PSAP	Public Safety Answering Point
PSTN	Public Switched Telephone Network
SALI	Subscriber ALI
SI	Spatial Interface
SIP	Session Initiated Protocol
SLA	Service Level Agreements
SOP	Standard Operating Procedures
SR	Selective Router
URN	Universal Routing Number
UPS	Uninterruptible Power Supply
U.S.	United States

MILITARY/CIVILIAN 911 SYSTEMS INTERCONNECTION AND INTEGRATION PLAYBOOK

This document and the process steps that follow have been developed by a joint effort of representatives of Pierce County, Joint Base Lewis-McChord (JBLM), and the Washington State 911 Program. Our thanks to:

Jonathan Brock	911 Coordinator, Pierce County, Washington
Jeffrey Rodeman	Emergency Communications Center Director, JBLM
Adam Wasserman	Washington State Enhanced 911 Coordinator, Washington State Emergency Management Division, Washington Military Department
William "Andy" Leneweaver	Deputy State 911 Coordinator for Enterprise Systems, Washington State Enhanced 911 Program

Their diligence and dedication to sharing replicable experiences to assist their counterparts across the country to achieve similar effective results are of utmost importance to improving public safety response between the Department of Defense and local, regional, and state 911 systems.

A detailed description of each participating agency is included in Appendix A.

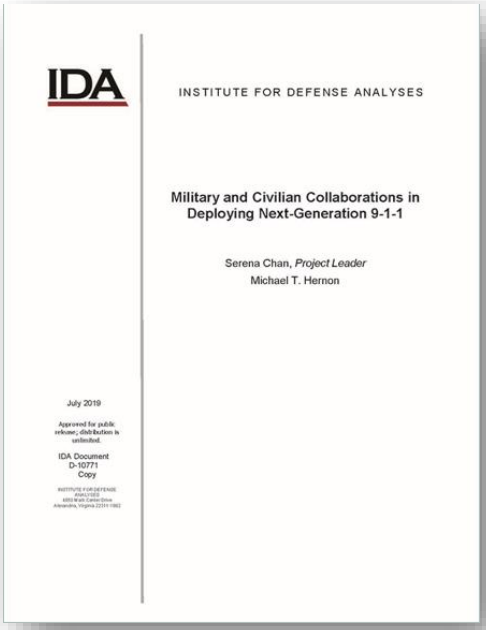
We also wish to acknowledge the contributions of the Defense Information Systems Agency (DISA), particularly John Holloway, for guidance and editing assistance.

1. Background

In every state, military bases, federal facilities, and Department of Defense (DoD) operations interact daily with their local communities. This interaction takes many forms—local contractors entering the military base to conduct business, military personnel commuting from off-base housing to on-base work assignments, children living on base going to local schools, shopping off base, or services such as waste removal, commissary delivery, telecommunications repairs, or even mutual aid such as emergency medical services (EMS) transport. Oftentimes, however, the military emergency communications networks and services are not interoperable with the local community emergency communications systems and networks, creating a gap in communication services and emergency response.

It is this need for interoperability that is the primary focus of Chapter 5 of the Interstate Playbook.

Prompted by events such as the 2009 incident at Ft. Hood, Texas,[1] and the 2015 armed services recruiting center incident in Chattanooga, Tennessee, the DoD reviewed policy and commissioned a several reports that illustrated the need for greater systems interoperability between military and civilian 911 communications operations.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INSTITUTE FOR DEFENSE ANALYSES

Military and Civilian Collaborations in Deploying Next-Generation 9-1-1

Serena Chan, *Project Leader*
Michael T. Hernon

July 2019

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- In an Institute for Defense Analyses July 2019 report, *Military and Civilian Collaborations in Deploying Next-Generation 9-1-1*, shortcomings in DoD policy and funding were noted as the primary reasons for the identified current services and integration gap. “Should these issues not be addressed, the capability gap will grow, as civilian agencies are increasingly deploying NG911 solutions at the state and regional levels.

- Maintaining parity with the surrounding civilian agencies is more critical in the NG911 environment than in the legacy, analog-based 9-1-1 environment, as the telecommunications providers will be retiring their entire legacy 9-1-1 infrastructure.”[2] In states with a significant DoD presence, such as California, we are already seeing notification to military partners that legacy infrastructure retirement will be experienced as early as 2022. Without

[1] *Protecting the Force, Lessons from Fort Hood*, Report of the DoD Independent Review, January 2010. https://apps.dtic.mil/docs/citations/ADA513143

[2] Chan, Serena and Hernon, Michael. *Military and Civilian Collaborations in Deploying Next-Generation 9-1-1*, July 2019, Institute for Defense Analyses. https://www.ida.org/research-and-publications/publications/all/m/mi/military-and-civilian-collaborations-in-deploying-next-generation-9-1-1

migration of military installations also connected to these systems, those systems will become islands unable to share information with mission partners; at worst, they will be unable to process any emergency requests for service, not to mention being responsible for costs associated with maintaining and servicing outdated and stranded technology. This situation is likely to result in higher risk to life and property, and degraded capabilities to fulfill safety obligations to their military personnel and under the numerous mutual aid agreements in place today.[3]

- State and local 911 authorities similarly have a need to interoperate with military facilities within their geographic boundaries. Mutual aid between local community response teams and the military happens at some level in most areas of the country. EMS or fire-rescue may be called to assist and augment military facilities support, response on highways and interstates, mass casualty incidents, or large-scale events requiring a multi-agency response, sometimes from military operations, are other examples that prove the need for close collaboration between the state and local 911 authority and the military. Even shared equipment, such as computer-aided dispatch (CAD) or radio systems that enhance response in an area, provides additional support that is of benefit to the state/local authority or the military when conditions warrant. While this edition of the Playbook focuses on migration when the public entity implements Next Generation 911 (NG911), this integration between military and civilian 911 systems can happen at any time, even in the legacy environment when interoperability is essential.

> The National 911 Program and the DoD have been collaborating to encourage enhanced relationships and interoperability of military emergency communications with their local and state civilian emergency communications partners.

- A model project was identified in the Pacific Northwest between Pierce County, Joint Base Lewis-McChord (JBLM), and the Washington State 911 Program. This example provides an effective and repeatable illustration of constructive methods of collaboration to produce positive results—leading to increased interoperability—and address the shortcomings highlighted in the DoD studies.

- It is neither sufficient nor effective for the DoD or civilian public safety answering points[4] (PSAPs) to migrate their systems to NG911 independently. A collaborative approach and coordinated transition will benefit both the military and civilian operations and provide improved services to the people they serve.

SUMMARY

[3] Ibid.
[4] Also referred to as emergency communications centers (ECCs)

The goal of Chapter 5 of the Interstate Playbook is to provide actionable examples to improve interoperability between military and civilian 911 operations to improve emergency response and enhance the safety of all citizens within respective jurisdictions—both inside and outside of the "fence line." The guidance outlined in this chapter provides tools for all parties in the way of actionable steps that will smooth the transition and allow for the highest level of collaboration and integration. While the example followed is Washington, other states have begun discussions and transition activities that include DoD facilities. Backgrounds on the participants in the Pacific Northwest model are in Appendix A and additional state case studies are in Appendix B.

Pierce County, JBLM, and the Washington State 911 Program are the primary focus of this Playbook chapter. Their collaboration will be examined to provide the necessary framework and guidance for other state, local, and military operations across the country to learn from their positive experiences and achieve interoperable systems with federal military PSAPs.

2. Purpose of the Playbook

Public safety projects—whether resource acquisition, technology deployments, or protocol implementation—have similar components and are generally well understood by leaders in public safety. Included, however, is a task list of steps undertaken in the Pierce County, Washington region to assist other states or regions that might not have undertaken a military integration.

- **Ideas, best practices, and templates available**
  The Playbook includes ideas, best practices, and methods to enhance interoperability and civilian/military relationships. The references, models, and templates, as well as a process list, are provided to assist the local 911 authority and military base leadership in a step-by-step methodology to drive the integration of systems successfully. It is hoped that the **Process Task List** will be valuable to both the military and the local or state 911 authority as a collection of steps that worked for them and could work for your agency to ease the integration process of military and civilian public safety operations and systems to improve interoperability.

- **Interoperability with military facilities is essential**
  There is a heightened awareness among local 911 jurisdictions and state agencies that interoperability with military facilities within their borders is not only important, but essential to the efficient functioning of a comprehensive NG911 system and, without this integration, the 911 operation does not take full advantage of the benefits and functionality of NG911.

- **Military PSAPs need to be fully NG911-capable**
  Likewise, there is a heightened awareness and desire on the part of military decision-makers to ensure their facilities are fully capable of enhanced communications and part of the emergency communications ecosystem within which their base resides. The guidance in this Playbook can help accomplish these goals.

2.1. How Civilian/Military Collaboration Can Succeed

This Playbook, Chapter 5, recognizes that the implementation, experience, and knowledge level may be very different between the military and local PSAP authority.

- **Capabilities range from a simple answering location to a sophisticated PSAP**
  In some situations, the military installation may not have a PSAP as defined by the state, but rather a simple answering point where base emergency calls terminate without the benefit of a calling number or location identification. In other situations, the military base may have a very sophisticated emergency communications operation integrated with other base safety functions.

- **Awareness and understanding are key**
  It is vital for state and local 911 authorities to understand military PSAP operations and vice versa.

> **"When it comes to success in this type of venture, there is no substitute for personal engagement and relationships. Invest the time in getting to know and understand your military counterparts, their operations and needs. It is truly the foundation for the entire process."**
>
> *Adam Wasserman, ENP, Washington State Enhanced 911 Coordinator*

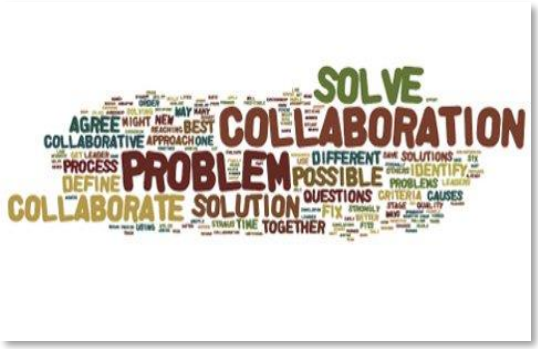
- How have 911 systems been built and how will the transition to NG911 change or stay the same for all jurisdictions involved?
- What security measures need to be ensured for the DoD?
- What cyberthreats escalate as the entity (state/local/military) changes?
- What technology is used for routing a 911 call?
- How will the NG911 network be configured at both the civilian and military PSAP?
- What is the demarcation point for interconnection?

SUMMARY

These questions are important to answer and be understood. State/local 911 authorities, as well as military PSAP authorities, should share detailed information to educate and inform all parties for comprehensive understanding.

2.2. Why Should State/Local 911 Authorities Care About Interoperating with the Military Base in Their Region?

DoD and civilian collaborations exist today on a spectrum ranging from broadly integrated systems centered on mutual aid agreements as the primary collaborative where civilian NG911 capabilities are optionally available to the military but there is no agreement or requirement to implement them, to a tightly integrated partnership where the DoD is a full and equal partner in a regional 911 solution and where NG911 migration is on a path to fully involve the military partner.



- **Collaboration offers enhanced effectiveness opportunities**
  Various collaborative approaches provide enhancements to the emergency communications environment, including operational effectiveness, improved information sharing, essential interoperability, systems continuity and resiliency, better training, and compliance with DoD policies.

- **Shared responsibilities**
  "DoD installations do not exist in isolation from the communities that surround them. Rather, the installations and the communities are involved in symbiotic economic, human capital, and operational relationships."[5]

Protection of the community-at-large should be viewed as neither a DoD nor a civilian agency responsibility, but a shared responsibility.

Although the onsite population at JBLM is approximately 115,000, many DoD personnel assigned to bases across the country and their family members reside in the local community and not on an installation.

- **Shared service populations**
  The population of most installations grows dramatically during the day as civilian employees, contractors, vendors, and military personnel living off base arrive on the installation to perform their duties. At JBLM, 5,000 civilian contractor personnel cross its front gate every day.

  Children of DoD personnel often attend schools in the local community regardless of whether they live on or off base, and many spouses of DoD personnel work in the private sector off base.

- **Economic contributions**
  Economically, military installations contribute a sizeable sum to the local and state economy. In the state of Washington, DoD spending exceeded $15 billion[6] in the form of personnel, goods and services, and contracts.

SUMMARY

The technological and operational discord that comes with non-integrated and non-interoperative 911 systems threatens to negatively impact efficiency and effectiveness.[7] States, local 911 authorities, and the DoD have a duty to consider how to better serve their entire communities. One way is to ensure the military installations become part of the state or local NG911 implementation plan.

2.3. Planned Technology Migration

The NG911 environment is significantly different from the current legacy 911 environment. These differences are not limited to standards and technology but also include adjustments to governance, management and operation of the system(s), and the delivery of both traditional 911 services along with

[5] Chan, Serena and Hernon, Michael. *Military and Civilian Collaborations in Deploying Next-Generation 9-1-1*, July 2019, Institute for Defense Analyses. https://www.ida.org/research-and-publications/publications/all/m/mi/military-and-civilian-collaborations-in-deploying-next-generation-9-1-1
[6] Defense Economic Director: Military Spending Important to Communities, David Vergun, March 19, 2019.
[7] Id. at 6.

other new advanced emergency services and additional data associated with the 911 call. The changes affect the entire 911 infrastructure.

- **Migration of legacy systems**
  Many states are in the process of planning their selective router migration to NG911, using different plans to accomplish it. The National Association of State Nine-One-One Administrators (NASNA)[8] recently surveyed states to assess the progress and timeline that states were undergoing as part of determining national status and implementation. Appendix C contains an estimated schedule, provided by NASNA, for the transition of the legacy selective routers by state.

  The state of California has taken a proactive approach to working with the military installations in its state and in October 2018 initiated conversations regarding the transition to NG911 with appropriate military parties in the state. The notification letter, included in Appendix D, from the California Governor's Office of Emergency Services (Cal OES) to the DoD was resent again in November 2019. The letter includes information on the timing of a transition and what it means to the military PSAPs that do not migrate in concert with the state plan. Essentially, no action would leave DoD PSAPs vulnerable to higher costs and isolation of technological integration.

- **Other states march forward**
  In addition to the work California has done, Alabama, Colorado, and North Carolina also have initiated dialogue with the DoD to establish a path forward to interoperating with military PSAPs and improving the connectivity into their state NG911 systems.

SUMMARY

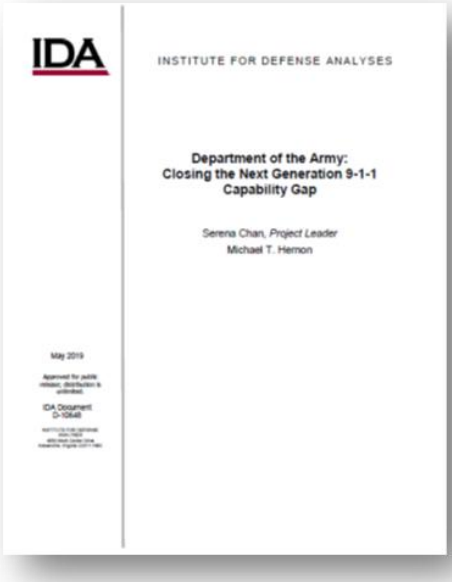
Case studies of these four states are included in Appendix B.

3. DOD Modernization Strategy

Issue 4[9] of 911.gov Connects, the newsletter of the National 911 Program, illustrated previous engagement at the federal level with national 911 organizations to improve emergency communications among PSAPs and the DoD during emergency incidents involving military personnel.

[8] https://www.nasna911.org/
[9] *DoD's PSAP Pilot Project Aims to Improve Communications During Military Incidents,* 911,gov Connects, Issue 4. https://www.911.gov/911connects/issue-4/DoDs-PSAP-Pilot-Project-Aims-to-Improve-Communication-During-Military-Incidents.html

- **Events create impetus**
  The events of July 16, 2015 created the impetus for the DoD and the 911 community to seek a major reevaluation of policies and procedures for the nation's military installations and facilities, and their interaction with local PSAPs. On that day, five men from the Marine Corps and Navy were killed by a lone gunman while working at two small off-base military facilities, only seven miles apart, in Chattanooga, Tennessee. Military bases and the DoD learned of the shootings through news coverage while Hamilton County 911 struggled to contact DoD. There was considerable delay in the appropriate people receiving actionable information.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INSTITUTE FOR DEFENSE ANALYSES

Department of the Army:
Closing the Next Generation 9-1-1
Capability Gap

Serena Chan, *Project Leader*
Michael T. Hernon

May 2019

IDA Document
D-10648

- **Evaluate policies aimed at protections**
  These events, and others related to technology and advancement of NG911 throughout the emergency communications community, caused the Secretary of Defense to determine that the DoD needed to evaluate its force protection policies, programs, and procedures to safeguard its people. Recent DoD planning has resulted in what the DoD refers to as its "Modernization Strategy."

- **Modernization Strategy vision**
  The goals of the Modernization Strategy are for the DoD to:

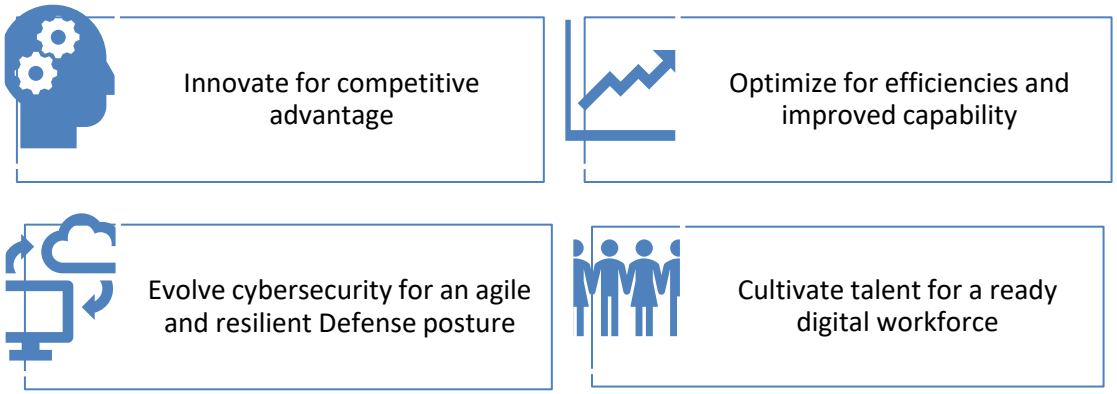


Figure 1: DoD Modernization Strategy Goals

SUMMARY

The Modernization Strategy, when fully established, will implement a DoD public safety communications ecosystem that will be aligned with civilian communications systems and provide the DoD with the capability necessary to communicate via enhanced communications technologies—just as their civilian counterparts. The DoD will develop policy and governance to help assess and mitigate capability gaps

identified in the Institute for Defense Analyses document, *Department of the Army: Closing the Next Generation 9-1-1 Capability Gap*.[10] One of the key findings in this report is the recommendation for the DoD to develop partnerships and engage with the industry.

3.1. Current DoD Installations Legacy Environment

Currently, military PSAPs mostly operate on legacy 911/E911[11] software supported with time division multiplex (TDM) private branch exchange (PBX) voice technology.

For the most part, military PSAPs have FXO[12]/CAMA[13] connections to the selective router for receiving 911 calls.

- **Know your military partners**
  If not already known, to find the military or civilian PSAPs/ECCs in your state or region, please consult the National Emergency Number Association (NENA) registry, Appendix E. The NENA Enhanced PSAP Registry and Census (EPRC) is a robust and in-depth compilation of PSAPs, allowing users to quickly search a location anywhere in the United States (U.S.) to determine the appropriate PSAP and its 24-hours a day, 7-days a week (24 x 7) emergency telephone numbers. The EPRC is quickly becoming recognized as the future for quickly finding PSAP information. The census component of the EPRC allows the PSAP (either civilian or military) to voluntarily input attributes to include information such as text-to-911 capability, the use of emergency medical dispatch protocols, TERT[14] participation, and more.[15]

[10] Chan, Serena and Hernon, Michael. *Department of the Army: Closing the Next Generation 9-1-1 Capability Gap*, May 2019, Institute for Defense Analyses. https://www.ida.org/research-and-publications/publications/all/d/da/department-of-the-army_closing-the-next-generation-9-1-1-capability-gap

[11] Enhanced 911

[12] Foreign Exchange Office (FXO) is the port(s) used by analog phone lines (also known as POTS – Plain Old Telephone Service) or phones. FXO is the port that receives the analog line. It is the plug on the phone or fax machine that provides an on-hook/off-hook indication. This port establishes the connection to the analog line. It is considered "foreign" as it generally is not the local exchange for telephone service that the public in the community uses but a separate communications network, in this case, a DoD network that "extends" service to a base location.

[13] Centralized Automated Message Accounting (CAMA) is a signaling type used to provide the calling party's automatic number identification (ANI) to the selective router. The selective router then routes the call to the appropriate PSAP based on the calling party's location.

[14] Telecommunicator Emergency Response Team/Taskforce. A group of trained telecommunications operations and support personnel able to respond to and work with another agency to receive, process, dispatch, and monitor calls for assistance.

[15] "A Powerful New Tool: NENA's Enhanced PSAP Registry and Census (EPRC)." *The Call*, Issue No. 37, pg 11.

The Federal Communications Commission (FCC or Commission) also has a voluntary registry, Appendix F. However, only some of the DoD PSAPs are registered and it is, therefore, less complete as a source for this type of information.

FIND OUT MORE……

To find out if there are military bases or installations in your state or region, see Appendices E and F.

NENA and the FCC maintain PSAP registries. Civilian and military PSAPs are encouraged to register their PSAP with NENA and the FCC and in accordance with DoD guidance.

SUMMARY

Appendix E and Appendix F contain information on NENA's EPRC and the FCC PSAP Registry, respectively, including instructions for how to access the registries. PSAPs and state 911 authorities should enter and register PSAP information and take an active role in ensuring that their EPRC data is current. At least an annual review of the information is recommended.

3.2. Future NG911 DoD Vision

The DoD recognizes that current methodologies within the military for handling and managing 911 calls on military bases with the Department of Defense Information Network (DODIN)[16] are obsolete and do not align with its vision for modernized communication services. The level of service is inconsistent not only between different installations but also between branches of service.

- **DoD acknowledges need to keep pace**
  The DoD has, therefore, concurred that it must maintain pace with state and municipal advances in communications for many reasons. One reason is that telecommunications carriers are retiring legacy selective router technology—if the DoD communication systems do not advance, the military will be at a disadvantage. The result will be an inability to provide a similar level of 911 service for those on military bases to that provided by their off-base non-military counterparts. This disparity is critical because, in many situations, most of the base population is only on base for 12 hours or less every 24 hours.

- **DoD vision and strategy**
  The DoD has developed a network vision and strategy to enhance the operational capability of the DoD PSAPs while assuring the integrity and security of the network(s) employed by the DoD. The design intends to deliver a secure means of routing NG911 Session Initiation Protocol (SIP)-based calls over the DODIN.

[16] Department of Defense Information Network. The set of information capabilities and associated processes for collecting, processing, storing, disseminating, and managing information on demand to warfighters, policymakers, and support personnel, whether interconnected or standalone.

SUMMARY

Regionalizing PSAP operations over a DoD Emergency Services Internet Protocol (IP) network (ESInet) also will provide the DoD with opportunities for significant operational and economic efficiencies. A high-level view of the DODIN design is shown in Figure 2. As illustrated, gateways will interface with state or regional authority networks.

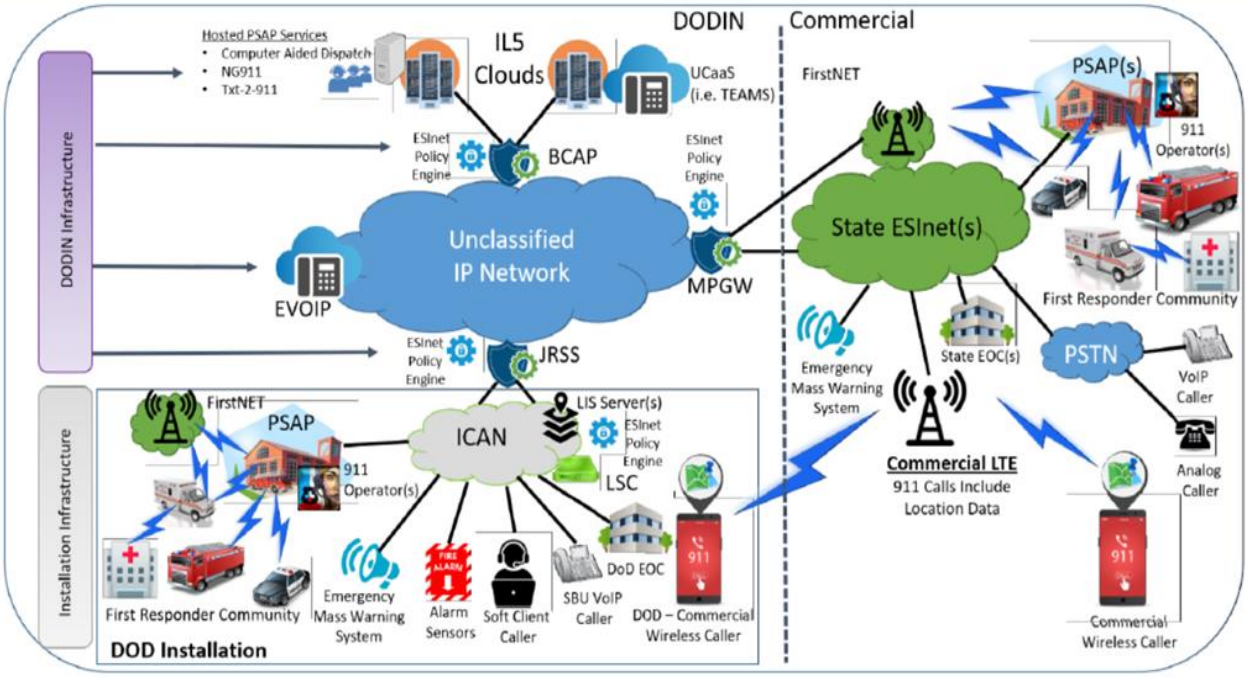


Figure 2: NG911 DoD Operations View, Department of Defense Information Network (DODIN), DISA

3.3. Mass Warning and Notification

3.3.1. Emergency Mass Warning and Notification

In collaboration with the National 911 Program, NASNA, the Association of Public-Safety Communications Officials (APCO) International, and NENA, the DoD led an effort to improve awareness of emergency incidents involving military personnel across geographically dispersed installations and facilities. The Emergency Mass Warning and Notification (EMWN) program was developed as a result of this collaboration.

- **Critical information transfer**
  The EMWN program's purpose is to allow local 911 PSAPs to provide critical information on military incidents to one single DoD entity that will be responsible for warning all military personnel within a predetermined radius, as well as notifying all appropriate DoD leadership.

- **Enhance communications**
  A secondary, but equally significant goal, is to enhance communication between the local PSAPs in the surrounding community and the DoD for incidents involving all military personnel—including those who do not work within traditional DoD "fence lines" (i.e., National Guard, Reserve Officers' Training Corps [ROTC], and off-base recruiting offices). PSAPs calling one DoD entity will increase DoD awareness overall—not only the awareness of the local military base—but also provide a national awareness of potential threats and related threats across all geographically dispersed installations.

SUMMARY

The mass warning and alert system notifies service members, DoD civilians, contractors, and dependents of an emergency detected through a variety of means.

3.3.2. Integrated Public Alert & Warning System

The Integrated Alert & Public Warning System (IPAWS), formerly known as the Emergency Alert System (EAS), was established under Executive Order 13407 as the national system for local alerting that provides authenticated emergency information to the public. More than 1,500 federal, state, local, tribal, and territorial alerting authorities use IPAWS to convey information about severe weather, missing children, and other public safety emergencies.

- **IPAWS delivers targeted messages**
  IPAWS delivers timely, geographically-targeted messages during emergencies to save lives and protect property through multiple communication pathways such as the Emergency Alert System, Wireless Emergency Alerts (WEAs), National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and other internet-connected devices and services.

SUMMARY

Appendix G contains additional detail of the EMWN and IPAWS.

3.4. Defense Information Systems Agency

The DoD chief information officer (CIO) is providing oversight, defining the migration strategy, and issuing the underlying requirements for advancing the military's public safety communications ecosystem. DISA serves as the executive architect to integrate the many subsystems comprising the ecosystem into the DoD enterprise.

- **DoD engages with 911 community**
  In the last few years, the DoD has engaged with 911 communities and organizations, inviting NASNA, NENA, and the National 911 Program to participate in DoD infrastructure migration activities to increase coordination with civilian authorities.

Through this involvement, the DoD understood the complexities of NG911 and began a project to coordinate 911 activities DoD-wide, including beginning the process to formalize NG911 transition within the DoD, as described in Appendix A, Joint Base Lewis McChord, of this Playbook.

- **DISA serves as technology lead**
  The DoD assigned DISA as the technology lead to develop an enterprise solution to provide direction and to develop the guidance and a Modernization Strategy for DoD PSAPs to implement NG911 and integrate with local or regional civilian agencies. The Pierce County/JBLM/Washington State 911 Program project and this Playbook are a culmination of the collaboration between local, state, and federal governments on moving communication technology forward for the improvement of 911 services in all parts of the government spectrum.

- **Coordination efforts**
  The DoD CIO, military branch services, and DISA are coordinating efforts to carry out the Modernization Strategy and to allow each branch of the military to address its needs—but under the same general DoD modernization strategies to achieve cohesive systems. Although this approach may add complexity, it also promises a more comprehensive solution to be managed in toto and ensure integration and interoperability that is necessary within the DoD and for each branch.

SUMMARY

States will need to coordinate with all military branches represented in their respective state, and their needs may be different. Similarly, the DoD should be cognizant of the fact that 911 is primarily a locally controlled (managed) service. It may be funded at a state level; it may have state requirements, rules, or laws that must be followed; and/or regulations that need to be met, but each state handles 911 differently and each local 911 jurisdiction also may handle 911 differently than the next community—just as every base and every branch are somewhat independent and autonomous.

DoD Focus

The DoD will need to understand that 911 is primarily a locally controlled (managed) service.

State Focus

Each state will need to coordinate with all military branches represented in their respective state.

4. Process Steps

Experience from Pierce County, JBLM, and the Washington State 911 Program includes steps and processes that all can learn from and, if desired, replicate to coordinate the interoperability of the military PSAPs with state and local 911 systems. The complete process guide, in Appendix H, could be used or adapted for each state or local implementation.

The process documented, as followed by the three entities and outlined below, provides guidance to achieve similar successful results. It is recognized that not every step in the process will apply to every situation. It also is recognized that there are many highly knowledgeable 911 directors and managers who understand and know what is necessary. Nonetheless, each step is included to assure that nothing is missed in the transition; this may prove beneficial for those who might not be versant in all parts of the process. This does not mean that new challenges—specific to your area or implementation—will not be experienced in your implementation.

The **Process Task List** tool can be printed and used for your project if desired.

Step 1: Build relationships

- The importance of understanding state and local jurisdictional 911 systems, governance and authority structures, and operations cannot be overstated.
- A basic and general understanding of how 911 system(s) work in the state and how various components of 911 are interconnected will be essential to understanding what process will be most successful in your area, state, or region.

The participants on all three levels of governance—state, local, and DoD—report that identifying the right person, whether on the military base or in state or local government, with authority for 911 is one of the most significant first steps that any entity can take. Sometimes that critical and effective first contact is not always the person at the top; sometimes it is the “who you know” person who can open doors for you and initiate contacts or just tell you who you need to talk to.

Step 2: Understand governance, funding, technology, and operations

- Understand how decision-making and approval processes are conducted in both the military and the local government.
- Identify who has the authority to approve the project and dedicate resources to achieving the end result.
- Know the existing reporting requirements that need to be understood, followed, and built into the process plan for your integration project.
- Consider the security and legal requirements and restrictions.
- Understand the DoD budget cycle. DoD budgets are developed 2-3 years in adavance. It is critical that local and state 911 officials understand how their integrations plans fit into the military budget cycle.

Cultivating relationships with key decision-makers was helpful to inform and provide compelling arguments of the benefits of collaboration and integration when decisions needed to be made. The identification of those influential individuals who are needed to keep the project on track and can assist with progressing the implementation was essential. In the same vein, identifying blockers and challengers who need to be nurtured and influenced was equally important.

Authority levels can vary in the military and that can be different with each branch of the military and it can even be different from base installation to base installation within a branch.

Step 3: Become familiar with military emergency communications and operations

- Understand the command structure/responsibility at the military installation.
- Identify who is responsible for decision-making, oversight, management, and operational protocol.
- Understand how decision-making and oversight is handled at a local level and how or if that is shared with other levels of government such as the state.
- Be mindful that each branch of the military may have a different structure so it is wise not to assume that because you understand the Army structure and processes, the Navy is going to be the same. In most situations, this will not be the case.

> Building a relationship of trust and mutual respect is the only way to truly achieve a successful outcome of 911 systems integration. Knowing who the military's executive agent is on the base will be important but this may not be the only person with whom the 911 authority will need to interact.
>
> *Jeff Rodeman, Emergency Communications Center Director, JBLM*

Step 4: Exchange information

- Exchange information so all parties understand how 911 is handled on and off base.
- Establish a regular rhythm of meetings and information sharing for comprehensive understanding to build trust.
- Understand the chain of command. Authority levels vary in the military and that can be different with each branch of the military and it can even be different from base installation to base installation within a branch.
- Identify how the telecommunications network on the military installation is configured as it will impact decisions.

The involved parties may need to gather additional information. After technical or vendor surveys, also conduct an outbrief/debrief so that all parties know what is expected of them.

The **Process Task List** was developed to assist the state, local 911 jurisdiction, and the military PSAP in initiating the conversation and documentation to begin the integration process. A complete list of process steps can be found in Appendix H.

The Process Task List was compiled by the Playbook participants and illustrates the steps they followed to integrate the JBLM PSAP with Pierce County 911 operations and meet the requirements of the Washington State 911 Program NG911 Plan.

Not all steps will apply to every implementation throughout the country. However, the list can serve as a guide for any state or local 911 authority that wants to begin the process of planning for a similar integration in their jurisdiction. Likewise, the Process Task List can be useful to the military to understand what needs to be done to integrate their military PSAP with the local 911 entity.

- Clarify the 911 supporting technology used at the military PSAP.
- Identify call-handling equipment (CHE), CAD system, radio system, and call handling protocols used to know what interfaces might be required.
- Determine if there are multi-line telephone systems (MLTSs) or PBXs on the military base and who is responsible for compliance with Kari's Law, RAY BAUM's Act, and the dispatchable location requirements of the FCC.[17]
- Find out the status of geospatial addressing on the base and/or in the local community.
- Determine the migration status to NG911 at the state/local and military PSAP level.
- Conduct an outbrief/debrief to clarify the expectations and responsibilities of all parties.

The answers to this discovery and the background information helped to lay the foundation for Pierce County, JBLM, and the Washington State 911 Program. The comprehensive understanding of operations and technology was invaluable in creating what was necessary going forward to successfully integrate JBLM with the Pierce County system on the state of Washington ESInet.

Action Checklist

The **Process Task List**, included as Appendix H, can assist the state, local 911 jurisdiction, and the military PSAP in initiating the conversation and documentation to begin the integration process.

[17] Informational documents on requirements for MLTS, notification requirements for 911 calls from MLTSs, and dispatchable location rules can be found at: https://www.911.gov/project_mltsdispatchablelocation.html

4.1. Project Communications

Informing and educating about what the project will accomplish to improve 911 services is important to consider. How will the project be managed and communicated to the appropriate authorities? Skillfully crafting the message to convey its significance is critical.

Communications Plan Considerations

- What does the local jurisdictional PSAP need to know about the DoD Modernization Strategy? What does the military leadership need to know and understand about the state or local NG911 migration plan?
- Do training documents, procedures or requirements need to change or be trained on in either of these entities?
- What does the military PSAP need to know about the integration?
- Do military training or protocols need to change?
- What education is needed on the military installation for those living and working on the facility?

4.1.1. Educating Decision-Makers About the Project

Playbook participants and those interviewed for the state profiles all noted the challenge and importance of succinctly conveying to elected officials or other decision-makers the need to sustain and invest in NG911.

- **Complexity of plans**
  Statewide NG911 transition plans can be complex, detail-oriented documents that senior policymakers and lawmakers rarely have the time to thoroughly review, contributing to the lack of knowledge about capabilities or how the whole ecosystem is interdependent and works together. As an example, some policymakers mistakenly believe that the implementation of an ESInet constitutes having NG911 or that if the state or local agency has text-to-911, they have completed their NG911 transition.

  Policymakers—military or civilian—should be able to read an informational piece on the statewide (or county) 911 plan and understand their state ecosystem's current capabilities and how it assists the public and the public safety responder community. Additionally, they should understand how future technology may complement or supplant those capabilities, which is essential for informed decision-making on future funding.

- **Critical importance of clear communication**
  Playbook participants expressed the importance of communication and information that would help governance bodies understand the needs of public safety. 911 officials should consider creating a messaging strategy that illustrates the significance of NG911 for the state, local jurisdiction, or DoD emergency communications ecosystem's success, articulating the need to overcome challenges such as introducing emerging technologies without disrupting current 911 legacy services, educating policymakers on the need to sustain legacy service until all entities are appropriately transitioned, and identifying a sustainable funding model.

- **Benefits and consequences of NG911 transition**
  Appendix I contains the benefits of collaboration and coordination between state and local 911 authorities and the military to transition to NG911 and the consequences of an uncoordinated transition to NG911 between state and local 911 authorities and U.S. military partners. Many points raised in these two documents have been developed from the experiences of the Washington Playbook participants as well as others highlighted in the state profiles.

SUMMARY

The benefits and consequences points can be useful in supporting the desire to move forward with state/local and military interoperability. They provide rationale and talking points to help explain the value of collaboration between military and civilian 911 systems to decision-makers. They can be printed as presented or adapted to address specific concerns for your implementation.

4.1.2. Project Communications Plan

As resources (both personnel and funding) are dedicated to achieving positive outcomes, everyone must understand the goals and the benefits and consequences of the project.

- **Formalize your communication processes for outages**
  A formal communications plan that describes the project, the individuals involved and their responsibilities, the progress and timeline, and informs the decision-makers of the implementation stages helps keep authorities and interested stakeholders apprised of the project's progress.

- **Check out the tools**
  Consult www.911.gov for educational materials that might be helpful when developing your communications or educational plan.

Communication Lessons

- Plan conduct an informational campaign to educate decision-makers about the benefits of collaboration between military and civilian 911 entities and the consequences of not doing such collaboration
- Involve both the military and civilian entity in the developement of the information campaign
- Tailor the message for the audience
- Ensure your plan has a feedback mechanism
- Consider extending the communications plan to public education

4.2. Agreements

In most cases, an agreement will be required to delineate and codify detailed understanding between the parties. In the military, agreements of this nature are known as Intergovernmental Service

Agreements (IGSAs). These agreements are not only a good business practice, but they are essential for documenting the parties' understandings, who has final decision-making authority for the various aspects of the interoperable relationship and technology, and funding commitments for future reference.

- **Don't trust your memory**
  You cannot rely on the individuals in place today to remember why a clause or stipulation was included. The DoD intends to have a memorandum of agreement/memorandum of understanding (MOA/MOU) between each installation and the associated municipal entity.

- **Review statutes and rules**
  To address concerns that the project is legal and meets state, local 911, and military requirements, it will be important to review statutes and rules or regulations applicable to the respective state housing the military installation. The staff Judge Advocate General (JAG) for the installation should be involved early and likely may be expected to be part of the development of the IGSA and sign off on it. Appendix J contains an example IGSA.

- **MOAs/MOUs and intergovernmental agreements are your friends**
  MOAs or MOUs are the simplest and easiest form of intergovernmental agreements and the most common in state or local government. These types of agreements outline and define the understanding of the parties and describe responsibilities, financial relationships, deadlines if appropriate, and other laws or regulations that need to be considered.

- **Understand federal requirements**
  States and local 911 authorities should become familiar with the federal government requirements regarding service requirements and the **need for MOAs/MOUs** with provider agencies for support. Understanding these requirements is important for the network provider and oversight agency as well.

- **Sample support agreements provide guidance**
  DoD Instruction Number 4000.19, August 31, 2018[18] contains information and direction to the DoD regarding support agreements. A state or local 911 authority should become familiar with these instructions to better understand the constraints and requirements within which the DoD must operate.

SUMMARY

MOA/MOU **templates are provided** in Appendix J, which offer states, counties, and the military a starting point.

[18] https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/400019p.pdf?ver=2019-02-26-085841-693

4.2.1. Non-Disclosure Agreements

It will be necessary to determine who holds the contract for NG911 services. This may vary by state.

- **Need for NDA**
  Anticipate the need for non-disclosure agreements (NDAs) so sensitive information can be shared between the state/county and county/military and the vendor(s). The local 911 authority/county and state might need to have an NDA with the military authority.

- **Involve military support and resources early**
  One lesson that JBLM was very clear on was the significance and importance of involving the military Support Agreements Manager through Resource Management or JAG early in the process.

SUMMARY

Agreements between the military and civilian entities are essential and will need to clarify understanding and commitments, any financial obligations, and describe responsibilities of the parties. They should be one of the most important tasks that is undertaken.

4.2.2. Alignment with State NG911 Plan

As noted earlier, in the state of Washington, the local 911 authority, in this case Pierce County, determines what is needed for its community and petitions the Washington State 911 Program for support and funding. If the request meets the State's strategic plan and aligns with NG911 goals, the State has an obligation to fund the request. This funding attitude and interpretation of statute and rules helped the progress in Washington.

4.2.3. Service Level Agreements

A service level agreement (SLA) is an agreement between two parties that defines the level of service—quality, responsiveness, remediation, etc.—expected from one party or both parties. SLAs are output-based in that their purpose is specifically to define what the customer will receive. These requirements may be different for civilian operations than they are for military operations. Both need to be defined in the SLA.

- **SLAs map out objectives**
  SLAs, sometimes called service level objectives (SLOs), need to be carefully developed and managed to ensure acceptable service is achievable and affordable.

- **Include military partners in SLA development**
  The military should be part of these developments to ensure their needs are appropriately addressed.

SUMMARY

See Appendix K for detailed information on recommended SLA content and best practices.

Agreement Lessons

- **Engage legal teams early** in the process for development of MOAs/MOUs/IGSAs
- Consult the examples and **templates provided** in the appendices
- Involve both the military and civilian entity in the developement of the agreements as appropriate
- **Consider NDAs**, where appropriate; consult example in the appendices for format
- Ensure SLAs are achievable and **costs and responsibilities are understood** by all parties

4.3. Cybersecurity

As public safety systems become more connected and use more devices and public connections, security risks and complexity grow.

- **Assess risk**
  Every year, thousands of cybersecurity incidents affect public safety agencies. Consequently, organizations must become stronger, faster, and more resilient in the face of persistent and ever-changing threats. Many agencies do not fully comprehend the risks and have limited ability to pinpoint where security dangers exist.

- **Utilize the TFOPA Readiness Scorecard**
  The FCC Task Force on Optimal Public Safety Answering Point Architecture (TFOPA), Working Group 2, *Phase II Supplemental Report: NG9-1-1 Readiness Scorecard* notes: "Provisions must be made to secure the network and NGCS, as they are not considered to be a 'walled-garden' or isolated network free from outside interaction. While the use of redundant private Multiprotocol Label Switching (MPLS) networks lends to the necessary reliability of data transmission across the ESInet, it would not mitigate the possible impacts to overall network security."[19]

SUMMARY

With threats increasing daily, agencies must implement a proactive, wide-ranging cybersecurity risk prevention program.

State and local 911 authorities are urged to **consider cybersecurity in the system design and operations**. Security guidance is available, including NENA standards (specifically the i3 and Next Generation Security standards), information security (InfoSec) standards, and other security standards.

[19] Task Force on Optimal Public Safety Answering Point Architecture (TFOPA) Working Group 2 Phase II Supplemental Report: NG9-1-1 Readiness Scorecard, December 2, 2016. Section 4.4 Security. https://transition.fcc.gov/pshs/911/TFOPA/TFOPA_WG2_Supplemental_Report-120216.pdf

Best practices from the National Institute of Standards and Technology (NIST), Internal Organization for Standardization (ISO), COBIT[20], and others also can be used to inform security operations.

4.3.1. DoD Communications Security

DoD Instruction 8523.01, Communications Security, issued January 6, 2021, establishes policy, assigns responsibilities, and provides procedures for managing communications security (COMSEC). It "applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD …"

- **Understand DoD security needs**
  The DoD's policy is to:

  > "a. Protect the communication of DoD information through the use of COMSEC measures … to safeguard communications. This includes protecting wired, wireless, and space systems from detection, traffic analysis, traffic flow security, intercept, jamming, and exploitation.
  >
  > "b. Maintain an inventory of COMSEC equipment, including controlled cryptographic items (CCI) and cryptographic high value products, and material that protects the confidentiality, integrity, and availability of classified and controlled unclassified information throughout the intelligence life of the information while withstanding attacks from emerging threats.
  >
  > "c. Plan for, program, budget, and integrate modernized cryptographic solutions before decertification of cryptographic products, protocols, and algorithms."

- **States have their laws and requirements for data security**
  Every state will have its laws, regulations and requirements for the collection, protection, and release of data. States, local 911 authorities, and military PSAP authorities will need to be well versed in those restrictions and allowances. Military installations that rely on the local PSAP for their emergency services must understand that their DoD regulations will not apply in this case and the collection, protection, and release of information related to DoD personnel will be handled in accordance with state laws.

SUMMARY

It will be very important for these policies to be shared and understood by all parties.

[20] Control Objectives for Information and Related Technologies

Cybersecurity Lessons

- Maintain an accurate picture of network infrastructure, an essential step to understanding the agency's potential for cybersecurity risk exposure
- Safeguard, reduce, and aid in the containment of threats that could disable or interrupt the ability to serve the community
- Reduce the potential for network failure from cybersecurity attacks
- Educate personnel on the basics of cybersecurity threat awareness
- Establish cybersecurity policies and procedures
- Ensure that IT network infrastructure is public-safety-grade and current with manufacturer software releases
- Understand and actively guard against cybersecurity threats

4.4. Technical/Technical Design

After governance, the technical considerations or technical design of how the military installation will interface and interconnect with the state or local 911 system is probably one of the most important aspects of integration planning.

4.4.1. Site Survey

Playbook participants suggest, based on their experiences, that site surveys should be conducted at all levels, including the state/local NG911 infrastructure and the DODIN or any other network to be involved in the implementation and connections. A site survey should document all equipment[21], technology,[22] security issues[23], and connectivity of the systems, as installed, at the time of the survey. It also should include software and applications, including installed versions, used by the entity. A site survey of the PSAP for network entry, landing, power, HVAC, rack space, etc. should be conducted as well.

[21] Heating, ventilation, and air conditioning, etc.
[22] Security issues appear when an unclassified server might be placed in a classified server room or the need to add a cell phone capability such as in the installation of RapidDeploy capability in a classified server area.
[23] Depending upon the location of the connection, the technology may be required to be on the JITC Approved Products List (APL).

- Upon completion of the site survey, project participants should review, in an outbrief/debrief, the results to ensure its completeness and accuracy from their perspective.
- The outbrief/debrief should be mandatory for all parties.
- Nuances frequently exist that may not be captured if an outside party is conducting the site survey.
- References, common names for locations or areas, room location descriptions, etc. can impact the accuracy of the site survey. Ensure they are well defined and understood by all parties.
- The site survey should become part of the record to be kept by the entity(s).

An NG911 infrastructure plan should be considered if it is determined necessary to interface with the state or local ESInet. On the military side, Joint Interoperability Test Command (JITC)[24] approval is a requirement.

4.4.2. Implementation Considerations

There are several steps that Pierce County, JBLM, and the Washington State 911 Program followed that may benefit implementations in other regions. Appendix L should be consulted for more detailed information on the steps followed by the Washington team. Below are high-level considerations to be considered.

✓ *Determine Demarcation Point*

The outcome of a site survey will help to identify where the 911 system service provider and/or its subcontractor(s) is going to provide the "drop" or connection point. Getting to the agreed-upon demarcation is one thing but getting from the demarcation point to the physical PSAP location may present another challenge.

✓ *Military Security Requirements*

Military security requirements will be specific both for cybersecurity concerns and interconnection planning. Civil entities will not have access to the DoD network.

[24] JITC is the DoD's joint interoperability compliance test agency for information technology. The JITC process uses risk-based Test Evaluation & Certification services, tools, and environments to ensure Joint Warfighting IT capabilities are interoperable and support mission needs. Where it deems appropriate, JITC issues certifications and recommends the inclusion of products, services, and tools on the APL.

✓ *Understand Requirements of your Service Provider*

The Communications Security, Reliability and Interoperability Council (CSRIC) VI's Final Report of March 8, 2019[25] includes information and background related to demarcation points between network providers that explain responsibility for managing and reporting failures. In addition, the FCC has rules for outage reporting that should be understood.

✓ *Bandwidth Requirements*

The bandwidth requirements, whether at the local 911 jurisdiction or the military PSAP, need to align with the current staffing model and current agency needs to support those. Determining bandwidth requirements is recommended during the site survey process and understanding what you physically have today for voice paths will be necessary to determine similar service levels in NG911.

✓ *Redundancy and Diversity Design*

Consider the need for reliability for both the military network and the state/local network and ensure the network design discussions address reliability and diversity along with who pays for additional redundancy and diversity that might be necessary, required, or desired. These decision points should be captured in the MOA/MOU.

✓ *Interface Specifications*

The entities will need to request the interface specifications if they are not provided and both local 911 jurisdictions and the military 911 entity need to request it, if not provided as part of the state contract. Neither party will be able to move forward without these specifications called out in an MOA/MOU.

✓ *Other Interfaces*

Other interfaces, that must also be detailed in the MOA/MOU, that may be required, such as CAD systems, CHE, centralized data storage, or others, will need to be considered in the technology design. Playbook participants caution that the NG911 system service provider and the military authority need to be part of the collaboration for this step to ensure it all works together.

4.4.3. Change Management

Change is inevitable—the networks and systems used in the processing of emergency calls for service are no exception. To effectively prepare for changes that are expected in an NG911 system, a comprehensive change management process (CMP) should be developed.

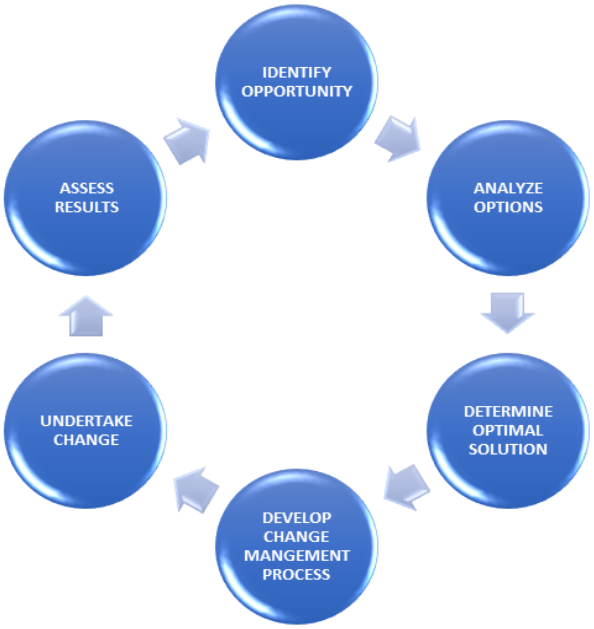
- **Change management minimizes risks to service quality**
  "The goal of the change management process is to ensure that standardized methods and procedures are used for efficient and prompt handling of all changes, in order to minimize the

[25] *Final Report – Recommendations for 9-1-1 System Reliability and Resiliency during the NG9-1-1 Transition,* Version 2.0 – March 8, 2019 (Addition of Best Practices). CSRIC.
https://www.fcc.gov/files/csric6wg1finalreport030819pdf

impact of change-related incidents upon service quality, and consequently improve the day-to-day operations of the organization."[26]

- **Develop a plan to avoid disruptions**
  Transitioning to new technology requires careful planning, organization, and execution. Even with substantial planning, modifications may be required throughout the transition process. Developing a well-documented CMP will be critical to avoid service disruption or even unforeseen effects on other systems or operations.

- **Review plan for Service impacts**
  Because 911 is a mission-critical service, technology changes must be reviewed and analyzed for service impacts. This ensures that risk to PSAP operations and stakeholders is minimized and carefully managed.



SUMMARY

Detailed information on a typical change management process and how to functionally implement one in your organization that addresses internal operations and provides review and authorization to proceed with changes proposed by system vendors is included in Appendix M. The appendix also includes information on building a formal workflow process, documented methods of procedures (MOPs), and essential communication plans.

[26] "Process overview." Change management (ITSM). Wikipedia. https://en.wikipedia.org/wiki/Change_management_(ITSM)

4.4.4. Other Implementation Considerations

The above technical considerations are, without question, essential. But they are by no means the only considerations that entities need to discuss and come to an acceptable understanding on.

✓ *Kari's Law, RAY BAUM'S Act, and Dispatchable Location*

Additional implementation considerations, beyond the technical portions of NG911 or even legacy integration, are the requirements of Kari's Law, RAY BAUM'S Act, and dispatchable location as set forth in federal statute and FCC requirements.

The National 911 Program website offers educational materials, instructions, and checklists for these requirements. Information is provided for states and local 911 jurisdictions; owners and operators of MLTS, with which the military base MLTS must comply; manufacturers of systems; and installation resources. These educational materials can be found at: https://www.911.gov/project_mltsdispatchablelocation.html.

According to the FCC, military MLTSs are not exempt from these new laws and regulations. Individuals responsible for military communications should review the requirements and determine what steps need to be taken to comply with the requirements and the appropriate deadlines to be aware of. DISA has included these compliance requirements in its modernization strategy. Besides the information that can be found on www.911.gov, another resource is the FCC itself. As the definitive source of interpretation of the regulation, military partners are encouraged to review the FCC website as well.

✓ *Routing Plans*

Implementation of policy routing rules in NGCS varies among NG911 system implementations; however, best practice is to establish a recurring pattern to exercise the policy routing rules the entity wants to occur when a 911 call cannot be delivered to the appropriate PSAP. In legacy and transitional environments, a PSAP may have a backup ingress network for receiving calls. In this case, the PSAP should develop a comprehensive plan to switch to the backup network as part of a periodic process for testing a continuity of operations (COOP) plan.

Routing plans should be clearly and fully defined and included in standard operating procedures (SOPs), training programs, COOP plans, and MOAs/MOUs as appropriate. They should be exercised and tested periodically to ensure they function as designed.

> ***NOTE***: Be cautious to ensure alternate routing design is de-conflicted and does not create loops that result in paths that "go nowhere."

Please see Appendix N for further detail on overflow, alternate, and default routing.

Agencies are urged to remember communication- and access-challenged populations in their network and routing policies to ensure that segment of the calling public is properly supported during the transition and under conditions of a service outage.

Technical Design Lessons

- Consult the Process Task List for steps to follow and design considerations
- Conduct a site survey, include military partners
- Pay attention to all interface requirements
- Understand Kari's Law, RAY BAUM'S Act, and dispatchable location requirements
- Understand Americans with Disabilities Act (ADA) requirements and provide for these populations' calling needs
- Involve both the military and civilian entities in the development of routing plans and define them in an MOU/MOA

4.5. Documentation

The importance of proper and comprehensive documentation—including network design diagrams, as-built schematics, documented routing plan decisions, and engineering specifications—as part of the ongoing record of the installation is significant.

- **Recordkeeping significance**
  The parties should establish a process for development and ongoing recordkeeping of the necessary documentation. Often this task is part of the annual review of the agreements to reconfirm understandings and to ensure comprehensive documentation.

- **Make documentation a habit**
  Developing habits of continual attention to documentation of the network, connection points, technology, dates of installation or activation, contacts used in the process, and any other pertinent data related to the change or implementation has been important to the Playbook participants and is a recommended best practice for all implementations.

SUMMARY

Confidence in this type of documentation process can become invaluable to determine points of failure and cost allocation and can assist in change management processes.

Documentation Lessons

- Develop as-built network design diagrams and maintain documentation as installed or changed over time
- Develop a process to review annually and update as necessary

4.6. Outage Monitoring, Crisis Communications Plans, and COOP Planning

While trouble or outage notification requirements for a service provider are guided by FCC requirements, those for a PSAP are commonly guided by local policy or state requirements. These might include notification to the affected PSAP(s), a state entity, or other public notifications depending on the extent of the service impacted area.

4.6.1. Outage Monitoring

Whether integrating military PSAPs with civilian PSAPs for NG911 or in the legacy environment, there are requirements that should be discussed and agreed to for service disruption at either PSAP. Outage monitoring and reporting procedures at a military PSAP are essentially the same as any civilian PSAP, but the military may have additional internal procedures to be understood by the local 911 authority.

- **Outage notification provides critical situational awareness**
  The FCC is charged with *"promoting safety of life and property through the use of wire and radio communications."*[27] This statutory objective and statutory authority have supported the Commission's outage reporting requirements, codified in Part 4 of the FCC rules, that require providers to report network outages that exceed specified magnitude and duration thresholds.[28] The outage data that the FCC collects provide critical situational awareness that enables the Commission to be an effective participant in emergency response and service restoration efforts, particularly in the early stages of communications disruption. Recent natural and manmade disasters, including hurricanes, tornadoes, floods wildfires, and severe winter storms, that have caused outages to communications networks demonstrate the need for reliable outage data. Whether partial or complete, outages can lead to preventable loss of life and damage to property by causing delays and errors in emergency response and disaster relief efforts.

- **NORS and DIRS useful tools**
  Currently, the FCC collects network outage information in the Network Outage Reporting System (NORS) and infrastructure status information in the Disaster Information Reporting System (DIRS). This information is sensitive for reasons concerning national security and commercial competitiveness, and the Commission thus treats it as confidential. The FCC makes this information available to the Department of Homeland Security's (DHS) National Cybersecurity and Communications Integration Center but does not share the information more broadly with other federal, state, or local partners.[29] However, in a *2016 Report and Order and Further Notice*, the Commission found that state and federal agencies would benefit from direct access to NORS data

[27] 47 U.S.C. § 151.
[28] *See* 47 CFR pt. 4.
[29] *New Part 4 of the Commission's Rules Concerning Disruptions to Communications*, ET Docket No. 04-35, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 16830, 16856, para. 47 (2004) (*2004 Part 4 Report and Order*) (making NORS reports available to DHS "in encrypted form and immediately upon receipt").

and that "such a process would serve the public interest if implemented with appropriate and sufficient safeguards."[30]

- **FCC Order promotes improved information sharing with local and state 911 authorities**
  The FCC Order issued March 17, 2021, promotes better information sharing and awareness during times of emergency. It provides state, federal, local, and Tribal partners with access to the critical NORS and DIRS information they need to ensure the public's safety while preserving the presumptive confidentiality of the information.

SUMMARY

The new FCC Order helps to ensure that public safety officials can appropriately and effectively leverage the same reliable and timely network outage and infrastructure status information as the Commission when responding to emergencies. For more information on the March 2021 Order, please see https://www.fcc.gov/document/fcc-share-communications-outage-info-federal-state-agencies-0.

4.6.2. Crisis Communications Plans

An outage reporting process or crisis communications plan (CCP) that is used by the state or local 911 jurisdiction is a useful tool to be followed when a service disruption impacts large portions of the served population. This CCP will always be activated as part of a COOP plan, but a COOP plan may or may not be activated when the CCP is utilized.

- **Formalize outage policy**
  A formalized outage reporting policy for the local jurisdiction or state must include military partners if they are integrated into the jurisdiction's network just as any other PSAP. The CCP should outline the processes to be followed in the event of a system failure when the public/military installation needs to be notified to use alternate means to communicate with emergency services and/or request assistance to reach the local PSAP.

- **Include military notification in the plan**
  The military PSAP also should be considered as part of the CCP and the military also may benefit from developing this type of tool, if not already in place. As part of the statewide or local 911 jurisdictional network, the federal military PSAP can assist in notifying its population.

More detail on the components of a CCP can be found in Appendix O.

[30] *Amendments to Part 4 of the Commission's Rules Concerning Disruptions to Communications, et al*., PS Docket No. 15-80 et al., Report and Order, Further Notice of Proposed Rulemaking, and Order on Reconsideration, 31 FCC Rcd 5817, 5853, para. 88 (2016) (*2016 Report and Order and Further Notice*).

4.6.3. Continuity of Operations Plan

The purpose of a COOP plan is to establish a strategy to promote the resilience of agencies and individual departments or divisions, to withstand and quickly recover from the impacts of a continuity event. Continuity is defined as "the ability to provide uninterrupted services and support, while maintaining organizational viability, before, during, and after an event that disrupts normal operations."[31] A continuity event is "an event [that] can disrupt the performance of essential functions, capabilities, and services at all levels."[32]

- **Include the military in your COOP plan**
  COOP plans should include military partners that might play a role, directly or indirectly, in COOP activities and impact the outcomes, as well as any appropriate involvement in activating the plan, when circumstances warrant. A COOP plan that is activated because a PSAP is flooded or has experienced a fire may not involve the military PSAP unless they serve in a backup capacity for the local 911 jurisdiction. In Pierce County, JBLM is included in COOP planning and training exercises in the region.

- **Share the COOP plan**
  COOP plans should be shared and compared among the state (if applicable), the local 911 jurisdictions bordering the PSAPs, and the military PSAP to ensure coordinated response and operations during an event that activates the COOP process and involves the respective parties. Coordination of these plans among entities with interconnected systems has proven beneficial in Pierce County. Advance sharing of processes assures that the COOP plan will be managed smoothly and effectively. See Appendix P for additional information on COOP plans.

[31] "Federal Continuity Directive 1.". U.S. Dept. of Homeland Security Federal Emergency Management Agency, January 17, 2017. https://www.fema.gov/sites/default/files/2020-07/January2017FCD1.pdf
[32] "Continuity Guidance Circular." Federal Emergency Management Agency, FEMA National Continuity Programs, February 2018. https://www.fema.gov/sites/default/files/2020-07/Continuity-Guidance-Circular_031218.pdf

Outage Management, Crisis Communications, and COOP Lessons

- Establish outage monitoring plan that meets needs of both military and civilian PSAPs
- Participate in the FCC's access to NORS and DIRS information data
- Jointly develop and communicate an outage monitoring process with appropriate local and military PSAP personnel
- Discuss and plan a communications and messaging strategy for outages
- Include the DoD in crisis communications and COOP activities as well as table-top or full-scale exercises
- Share COOP plans among the state, neighboring local 911 jurisdictions, and the military PSAP—as appropriate—to ensure coordinated response

4.7. Geographic Information Systems

In NG911, GIS is far more than a mapping program or geographic information system. Rather, it is a complex mix of geospatial data, database management, display technology, and analysis tools that can be used to display or provide GIS-based location information and enable processes such as routing an emergency call using geographic locations. All information in a GIS is referenced to a location. A GIS can contain images of aerial photography, photographs of homes, floor plans of buildings, and large amounts of text and attribute information, all tied into databases by their location on the earth's surface. GIS allows every feature on a map to be represented by points, lines, or polygons. Lines can be streets, pipelines, creeks, and railroads. Points could be fire hydrants, cell tower locations, building structures, or mileposts. Polygons represent areas in a GIS. Polygons could be city boundaries, county boundaries, emergency service zone (ESZ) areas, lakes, and others.

4.7.1. GIS and Military Addressing Plans

GIS is the driver for many aspects of NG911, and it is just as important on the military installation as it is in the civilian world to make NG911 fully functional. This may be the biggest hurdle that the local jurisdiction and military operations face for full system and functional interoperability.

- **GIS addressing for military**
  Traditionally, military installations have not been addressed in the same way as civilian areas and there is frequently little interest in converting to GIS addresses or dual addressing that accommodates both civilian GIS and military building numbers for structures. However, this appears to be changing and the DoD intends to apply GIS standards to address military installation buildings and locations. It is expected that sufficient basic GIS information for locating incidents on the base will be shared.

- **Ensure the need for standardized GIS is understood**

Military personnel will need to fully understand the state's and local jurisdiction's need to use GIS geospatial data rather than rely on building numbers traditionally found on military bases. For a military installation/base/camp/facility, a good deal of effort may be needed to implement GIS that is consistent with state and/or local GIS standards. Understanding the need to use GIS for location services for mutual aid response on the base will be significant.

Appendix Q describes the GIS progression steps from legacy 911 to NG911—a continuum of activities and events required to achieve spatial interface transition from legacy services such as automatic location identification (ALI) and the master street address guide (MSAG) to geospatial routing.

GIS Lessons

- Military bases should use local common addressing conventions and integrate their GIS into statewide systems
- Local and state 911 authorities should be prepared for only basic GIS location data from military installations
- GIS is a dynamic process and data requires regular updates
- The parties should define expectations and frequency of follow up and document both
- GIS understandings should be part of the MOU/MOA
- Identify who is responsible for GIS data for the military and the state/local jurisdiction

4.8. Test Plans, SOPs, and Training

Testing involves planning, effort, time, and resources. Expect that some technology can present more challenges than others and be aware that you may experience system capacity issues if you need both centralized automatic message accounting (CAMA) and SIP interfaces. Technical discussions with the provider should help to clarify not only the capacity needs but also the timeline and resolution options.

4.8.1. Test Plan Development

Operational readiness testing can be a challenge. In Washington, statewide cutover and test plans did not allow the level of granularity that was needed for each PSAP to identify and overcome operational readiness issues when testing until the cutover occurred.

PSAPs should be aware that a test plan should be developed and, if possible, conducted on all functions that were handled under the legacy system, not just call handling. This should include all interfaces such as CAD, recording devices, records management systems, mapping, and any others used to support the 911 function.

Entities are encouraged to look at the system as a whole and not just single functions. Do not develop a test plan that just covers a single interface but pay attention to all parts of the integrated system.

4.8.2. Standard Operating Procedures

Throughout the country, PSAPs adopt and use industry standards and best practices to assure the effectiveness of the agency and that the best possible service is provided to citizens and first responders. Measurable standards create an objective view of operations and provide for consistent interactions with the public and first responders and a quality standard of care. SOPs should establish common and preferred, if not required, methods of handling situations.

SOPs that impact the interaction of civilian and military PSAP functions should be jointly developed, approved, and reviewed by emergency communications authorities collaboratively. Existing SOPs should be reviewed and updated, as appropriate, for NG911 services and differing methods of operation. For example, new SOPs might be necessary for NG911 service offerings such as text calls, video documentation, and custodianship of the additional data elements related to a 911 call.

Military and civilian PSAPs should determine if an SOP is required specifically for how the civilian and military PSAPs will interact operationally, or between the state program and the military installation, for situations like outage notifications or backup operations.

Once SOPs have been updated, or created, and approved, training of 911 and support staff is necessary.

4.8.3. Training

NG911, per se, does not require specific training for the telecommunicator. Changes in network and 911 delivery systems happen before the call is presented to the answering position. However, because new services, methods, data, and communication types are part of an NG911 transition, additional or revised training and practices will need to be addressed. Services such as video, text, multimedia service, changes to SOPs, handling digital or electronic alarms and sensors, learning new terminology, additional skills related to GIS interpretation, trouble identification and reporting, and cybersecurity threat identification will require attention to staff retraining.[33]

- **Military PSAPs need training too**
  As reported in the Institute for Defense Analyses document, *Department of the Army: Closing the Next Generation 9-1-1 Capability Gap*. Table 2-1[34], there were no specific training programs for NG911 within the Army structure at the time of publication (May 2019). This may or may not be true for other branches of the military. However, DoD is advancing its mandate that all PSAP operators are trained to DoD-accepted standards; this mandate is awaiting approval.

[33] NENA Informational Document, Changing Role of the 911 Telecommunicator
[34] Chan, Serena and Hernon, Michael. *Department of the Army: Closing the Next Generation 9-1-1 Capability Gap*, May 2019, Institute for Defense Analyses. https://www.ida.org/research-and-publications/publications/all/d/da/department-of-the-army_closing-the-next-generation-9-1-1-capability-gap

- **Share your training program**
  Establish and exchange training program information to familiarize the civilian and military PSAP operations with each other's processes. Also consider bringing civilian PSAP operations onto an installation that they serve to meet with the DoD responders. Engagement of the entities at this level will strengthen the working relationship and increase understanding.

- **Update training programs for NG911**
  PSAP training programs at civilian and military PSAPs should be reviewed and updated for new terms, new/changed procedures, documentation requirements, and any other factors that need to be understood by the telecommunicator, dispatcher, training coordinator, or others affected by NG911. This task includes a review of any systems or technology to determine if an update, or perhaps re-engineering, is necessary to accommodate additional information or data fields.

SUMMARY

Military installations in your jurisdiction would be well served if the state or local 911 authority extended the training offered to local PSAP personnel to appropriate military personnel. All can benefit from consistently trained and knowledgeable staff.

Testing, SOPs, and Training Lessons

- Jointly devleop a comprehensive testing plan for all functional elements in the system
- Conduct testing on all functions; document results; follow up on any non-satisfactory results
- Jointly develop a comprehensive training program or update existing PSAP training programs at civilian and military operations
- Share and compare training programs
- Review training for new terms, new/changed procedures, documentation requirements, and any other factors impacted by NG911
- Conduct onsite visits for PSAP personnel to increase awareness and understanding
- Include military and civilian personnel in training

5. Lessons Learned

The nation's 911 emergency communications systems require a transition from obsolete analog technologies to modern digital technologies, including NG911 systems that will support the many ways in which the public and the military communicate. If the DoD PSAPs' transitions to NG911 are delayed due to limited resources or other policy challenges, systems will be fragmented and lack the integration needed to adequately protect the public and military assets. Likewise, if the DoD progresses its transition to advanced technology absent any coordination with state and local 911 jurisdictions, the same opportunity to interoperate will be missed. Failure to act in a timely and coordinated manner

ultimately will cost money and erode trust in one of our country's most important resources for all parties involved.

The participants in the Washington state project firmly believe that their ability to interoperate and the coordinated approach to emergency services they have taken in their region, both on and off the base, have enhanced the service level for their citizens, military personnel, and responders.

Coordination benefited both the local 911 jurisdiction and the military PSAP

- By working together both civilian and military 911 operations achieved enhanced capabilities, resulting in improved services for their constituents.
- By breaking out of siloes and coordinating operations, improvements to services are realized.

Collaboration increases opportunities

- JBLM emergency communication services was protected from obsolescence and migrated with civilian PSAP partners.
- GIS collaboration brings the DoD PSAP to a level playing field with the local community, contributes to statewide GIS accuracy, and improves mutual aid response.

NG911 implementation serves the entire region equally

- JBLM emergency responders receive the same enhanced information available through text, video, and data generated by these advanced systems as their civilian counterparts.
- Individuals who live in the community but work on base are afforded the same services on base or off.

Communication

- The interoperability project should seek to enhance communications and understanding between the participants and strengthen the relationship between the civilian and military in the region.

6. Tools and Templates

There are several useful tools available to assist states, local 911 jurisdictions and federal military installations navigate the process to migrate 911 from legacy systems to NG911 and to integrate military and civilian technology based on the experience and lessons of others who have addressed these issues.

Among the tools made available in this Playbook, several are critically important to assist both the civilian and military PSAPs in their interoperability efforts. They include:

- A step-by-step guide that identifies the primary steps and actions that need to occur in the interoperability process is part of Appendix H.
- Appendix I contains information that can be used as handouts for civilian and military decision-makers on the benefits of interoperability and the consequences of not pursuing interoperability.
- Ideas for MOA, IGSA, and NDA development are included in Appendix J.
- Support references and a recommended bibliography of documents and resources to assist state, local, and military entities can be found in Appendix R.

7. Call to Action

Some civilian emergency communications operations and states have already made substantial progress in their migration from the legacy environment to NG911—some, but not all. The military also must make this migration to close what has been referred to as the NG911 capability gap. This gap in technological capabilities can have a broad range, depending on the state's or local 911 authority's progress combined with the lack of sophisticated communications and integration on the military base.

There exists an opportunity to coordinate network migration between the military and civilian PSAPs throughout the country. DoD and DISA are moving forward. It is incumbent on the state and local 911 jurisdictions to begin engagement and planning with their federal and military partners to shrink the capability gap between all agencies and to enhance 911 service in all jurisdictions.

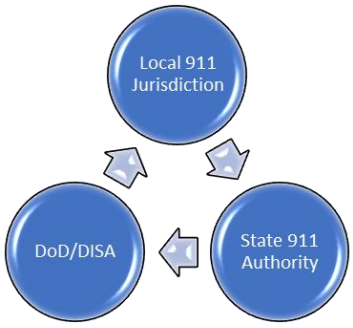
Templates and checklists can be useful tools to help navigate the process.

It is incumbent on both sides of this equation to consider how best to address these needs in their base of operations.	• Improve services and situational awareness • Address needs of those served
A failure of military installations in states to migrate to NG911 along with the local 911 jurisdictions in which they reside will eventually lead to loss of standards-based emergency call processing capability and an increased level of risk potentially at a very high financial cost.	•Mitigate risk to capability gap •Contain costs
With the currently installed, analog-based technologies at end-of-life, the migration at military installations and the local 911 jurisdictional level must also continue to progress simultaneously to ensure that the necessary capability is still available when the commercial providers retire their legacy network equipment.	•End of life technology must be addressed
It is imperative that civilian 911 operations—state and local—and the military installations within their jurisdictions collaborate to ensure continually improving emergency communications services to the communities they serve.	•Collaborate to ensure service improvement •Integrate to enhance capabilities

Key focus points include:

- Communicate early and often.
- Include the military PSAP in NG911 transition discussions and planning.
- Partnerships work with open conversation and participation from all.
- Collaboration is key to successful outcomes.
- Coordination will help the project stay on track.
- Interoperability between military and civilian 911 systems and operations is essential.

Interoperability between both civilian and military PSAP is paramount. It is not enough for each to upgrade to NG911 independently without ensuring that critical information regarding the caller or incident can be shared between NG911 systems.



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APPENDIX A – PIERCE COUNTY, JBLM, AND WASHINGTON STATE

Pacific Northwest Interstate Playbook Participants

➢ Pierce County

Pierce County is in the state of Washington, immediately south of Seattle. Its land area ranges from sea level to 14,411 feet (the summit of Mt. Rainier). The second-most populous county in Washington, the 2020 population is estimated at 904,980. The county seat, and largest city, is Tacoma. JBLM is the largest public employer in the county, contributing roughly 60,000 military and civilian jobs to the region.

The Revised Code of Washington[35] places responsibility for 911 systems and services with each county. In Pierce County, the 911 Program Office is organized under the Department of Emergency Management (DEM).

The overarching goals and objectives of the 911 Program Office are to:

- Ensure that all residents have reliable access to 911 services.
- Sustain all 911 call processing systems in Pierce County through upgrades and maintenance.
- Plan for the future improvements and security to the 911 system, including NG911
- Provide public education to Pierce County residents on 911 services.

The Pierce County 911 Program coordinates 911 services for three primary PSAPs:

- South Sound 911 – A primary PSAP within the Pierce County Public Development Agency that is the result of municipal PSAP consolidations over the past decade and which serves the majority of the residents and visitors to Pierce County.
- JBLM – A primary PSAP organized under the Directorate of Emergency Services on base. In coordination with Pierce County 911 Program and other primary PSAPs in Pierce County, receives calls originating from on-base as well as the limited access highways adjacent to the

[35] Title 38 – Militia and Military Affairs; Chapter 52 – Emergency Management. https://mil.wa.gov/laws-and-regulations

base. During the business day, the base population makes JBLM the fourth largest city in Washington State.

- Washington State Patrol (District 1) – A bureau within the Washington State Patrol (WSP), WSP-D1 is a primary PSAP receiving cellular calls from the limited access highways within the county.

These three primary PSAPs and two secondary PSAPs (South Sound 911 – FireCom and Tacoma Fire Department) provide dispatching services for 21 law enforcement and 20 fire/EMS agencies. Across the five PSAPs, there are currently 66 call-taking/dispatching consoles in operation.

South Sound 911 is constructing a new facility to house its PSAPs and Records operations. When finished, the facility will house 55 consoles and will merge South Sound 911 – FireCom's operations into South Sound 911.

Call volumes for each primary PSAP vary; in 2020, South Sound 911 answered over 490,000 911 calls, JBLM answered almost 9,000, and WSP-D1 answered close to 80,000.

Each PSAP is responsible for its staffing. All have established minimum training requirements that roughly align with the APCO Public Safety Telecommunicator (PST) curriculum and the *Recommended Minimum Training Guidelines for the Telecommunicator*[36], which was developed by a consortium of industry experts and whose discussion was supported and facilitated by the National 911 Program.

The Pierce County 911 Program provides long-term planning and support to the PSAPs within Pierce County. This is accomplished through the coordination of technology and equipment resources with vendors, PSAPs, network service providers, wireless carriers, geographic information systems (GIS) and spatial services, cybersecurity information, and monitoring vendors. The Pierce County 911 Program also is responsible for the maintenance and updates to the MSAG, both on and off the base, a crucial component to proper routing of 911 calls to the correct PSAP.

South Sound 911 and JBLM have partnered to implement a shared CAD system in a host/remote configuration. In addition, as South Sound 911 nears completion of its new facility, the Pierce County 911 Program will coordinate upgrades to the existing call handling system at JBLM to allow the base to share the same system as South Sound 911.

Through mutual aid agreements, JBLM can access and utilize the County's 700 megahertz (MHz) P25 digital trunked communications system.

Pierce County 911 Program staff participate on multiple committees that serve to set the technical and operational standards for PSAPs both within the state of Washington and across the nation.

[36] Recommended 911 Minimum Training for Telecommunicators. 911.gov. https://www.911.gov/project_recommended911minimumtrainingfortelecommunicators.html

➢ Joint Base Lewis-McChord

JBLM is the DoD's largest military installation on the West Coast. The joint base, which began operation in October 2010 from the consolidation of Fort Lewis (Army) and McChord Air Force Base, is one of 12 joint bases created by the 2005 Base Realignment and Closure Commission. Fort Lewis was established in 1917 and McChord was established in 1947, the same year the U.S. Air Force became a separate branch of the armed forces.

JBLM has more than 45,000 active service members and 15,000 civilian and contract workers. The post supports over 120,000 military retirees and more than 60,000 family members living both on and off post. The base has a total active population of nearly 210,000 people, making it the fourth largest military installation in the world by population. JBLM consists of four geographical areas, Lewis Main, Lewis North, McChord Field, and Yakima Training Center. Lewis Main, Lewis North, and McChord Field cover over 86,000 acres; while Yakima Training Center covers 324,000 acres or 505 square miles in eastern Washington.

JBLM is a training and mobilization center for all services and is the only Army power-projection platform west of the Rockies. Its key geographic location provides rapid access to the deep-water ports of Tacoma, Olympia, and Seattle for deploying equipment. Units can be deployed from McChord Field, and individuals and small groups can also use nearby Sea-Tac Airport. The strategic location of the base provides Air Force units with the ability to conduct combat humanitarian airlift to any location in the world with the C-17A Globemaster III, the most flexible cargo aircraft in the airlift force.

The Joint Base Headquarters (JBHQ) operates the installation in support of the warfighting units, their families, and the extended military community. JBHQ's mission is to provide support to mission commanders and the joint base community, to serve as an enabler to the soldiers as they train and project America's combat power, and to make JBLM the station of choice for American soldiers and their families.

With an Army joint base commander and an Air Force deputy joint base commander, JBHQ supports the installation through directorates and agencies that provide a full range of city services and quality-of-life functions; everything from facilities maintenance, recreation, and family programs to training support and emergency services.

➢ Washington State Enhanced 911 Program

The Washington State Enhanced 911 Coordination Office (SECO), a Unit under the Emergency Management Division (EMD) within the Washington Military Department, was established in 1992 to

provide 911 coordination statewide.[37] SECO provides long-term planning and support to the PSAPs for all jurisdictions in the state, including Pierce County.

In Washington State, providing 911 is a coordinated, cooperative effort—from the caller to the call-taker—and involves the telecommunications systems service providers (or originating service provider [OSPs]), SECO, and the covered service provider with advice and assistance from the State E911 Advisory Committee, and the counties and their PSAPs. On behalf of the counties, SECO provides for centralized cooperation and coordination with all involved parties.

The State Enhanced 911 Coordination Office, headed by the State Enhanced 911 Coordinator, is responsible for, among other things, coordinating and facilitating the implementation and operation of 911 throughout the state. This includes:

- Considering the base needs of individual counties for specific assistance to ensure a statewide baseline of service
- Specifying the rules defining the purposes for which available state enhanced 911 funding may be expended
- Coordinating the counties' efforts for modernizing their existing 911 communications systems
- Coordination and management to ensure statewide dialing of 911 is available
- Providing a statewide training program
- Providing operational funding assistance to qualifying local jurisdictions for the operation of primary PSAPs including salary and benefit support for telecommunicators, county 911 coordinators, MSAG, mapping/GIS, information technology (IT), public education, and training, as well as PSAP call taking hardware/software maintenance and, as funds are available, providing reimbursement of certain capital equipment replacement.

The State of Washington and all Washington State counties are authorized by the Revised Code of Washington (RCW) 82.14B.030 to impose an enhanced 911 excise tax on the use of switched access lines, radio access lines, pre-paid access, and voice over IP (VoIP) access lines. The carriers collect the fees and submit them to the Department of Revenue, which then deposits the fees into the state and the respective county's enhanced 911 accounts. Fee usage is restricted to costs directly related to providing 911 services.

SECO receives advice and assistance from a statutory Enhanced 911 Advisory Committee representing diverse geographical areas of the state and consisting of representatives of various 911 stakeholder

[37] RCW 38.52.520 established the State E911 Coordination Office. https://apps.leg.wa.gov/rcw/default.aspx?cite=38.52.520

groups including 911 and public safety professional associations, county and local government associations, first responder professional associations, and telecommunications service providers.

SECO staff also host or participate on various committees of federal, state, local, and private entities to enhance the public safety communications posture of the State of Washington.

APPENDIX B – STATE CASE STUDIES

Case studies for Alabama, California, Colorado, and North Carolina can be found on the pages that follow. An example of county/military collaboration in Prince George County, Virginia, is also included in this appendix.

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Alabama

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STATE PROFILE

EXECUTIVE DIRECTOR, ALABAMA 9-1-1 BOARD
Leah Missildine

CONTACT

PHONE: 334.440.7911

WEBSITE: https://al911board.com/

EMAIL: leah@al911board.com

IMPORTANT LINKS

AL 9-1-1 Board: https://al911board.com

Legislation & Reports: https://al911board.com/legal/legislation

Statewide NG9-1-1 Plan: https://al911board.com/ANGEN/Home

Allowable Expense from 9-1-1 Funds: Lease, purchase, maintenance of CHE (hardware and software); lease purchase of CAD (hardware and software); lease, purchase, maintenance of building & facilities, training, program administration, travel expenses. lease, purchase, maintenance of radio dispatch networks for local 911 jurisdictions and authorities.

Mission:
"To work in partnership with Emergency Communication Districts of Alabama to facilitate and promote effective, efficient, and reliable 9-1-1 service statewide to the residents and visitors of Alabama."

CURRENT ACTIVITIES AND PROGRAMS

9-1-1 systems in Alabama are managed by an Emergency Communications District. An ECD may serve a County or a City/Municipality. All 67 Counties have an ECD and within some Counties one or more municipalities have a separate ECD. As part of the ANGEN NG9-1-1 implementation, text for 9-1-1 is provided by the network service provider. The service allows for both texting to the 9-1-1 Center as well as outbound texting from the 9-1-1 Center. In November 2020, grant awards for projects related to the continued pursuit of NG9-1-1 and other services were given in the amount of $783,392 to 19 ECDs (nine projects).

NG9-1-1 STATUS

ESInet Migration Progress:
All districts are connected to the statewide ESInet with the exception of less than 5 remaining districts to be completed by Q1, 2021.

# of Primary PSAPs/ECCs or 9-1-1 jurisdictions:
67 Districts and 18 Municipalities=85 primary governmental jurisdictions; 114 Primary PSAPs

9-1-1 Funding:
Only 911 districts are allowed to be funded; no state 9-1-1 funds available for federal network integration.

NG9-1-1 PROGRESS

SECURITY	Foundational
PSAP/ECC CALL HANDLING	Transitional
NETWORK	Transitional
CORE SERVICES	Intermediate
ROUTING & LOCATION	Transitional
OPERATIONS	Transitional
MSAG TO GIS DATA SYNC COMPLETE	Foundational
GOVERNANCE	Jurisdictional End State

Alabama Profile

9-1-1 systems in Alabama are managed by an Emergency Communications District (ECD). An ECD serves a County or a City/Municipality. All 67 Counties have an ECD and within some Counties one or more municipalities have a separate ECD.

Each telephone subscriber in Alabama pays $1.86 per phone per month on their phone bill and this revenue is forwarded to the State 9-1-1 Board by telephone service providers. Subscribers that use a pre-paid telephone service pay $1.86 at the point of sale and these funds are also forwarded to the State Board after being collected and processed by the Department of Revenue.

There is a 13-member oversight board appointed by the Governor, composed by law of representatives of 9-1-1 districts, commercial members (CMRS providers), cable operators, and local exchange carriers. The State Board disburses funds to the 67 County and 18 Municipality ECDs that administer local 9-1-1 systems.

➢ General Statewide/Local NG911 Status

Several years ago, the State initiated a project called the Alabama Next Generation Emergency Network (ANGEN). The first phase of the project was to aggregate all wireless 9-1-1 traffic to a single NG9-1-1 routing platform which was completed at the end of 2017. Following this initial phase, a change in system service provider was made and the state then started the build out the ESInet to all Alabama primary PSAPs (those funded through the state office from the statewide 9-1-1 surcharge). The state reports they are within 5 ECDs (of which there are 85 primary stakeholders considered for funding) of completing this transition to the ESInet. Delays have been due to a few PSAPs that have had some CPE issues and/or were constructing new buildings that required the state to delay circuit installation. The SSP has been simultaneously working with carriers around the state to start the conversion of wireline and VoIP traffic to the NG9-1-1 environment. When this work is finished, it will complete the transition to their statewide ESInet.

➢ Interaction with Military PSAPS

CURRENT ACTIVITIES:

Local 911 jurisdictions are encouraged to work with their military partner PSAPs to integrate network and services. The state program helps to facilitate discussion between local jurisdictions and the base personnel.

BIGGEST CHALLENGE:

- Frequent personnel changes at the military
- Procurement issues in every case-FEDERAL PROCUREMENT; SECURITY CONCERNS

WHAT HAVE YOU LEARNED:

- You must concentrate on constant communication
- Identifying the right person to talk to is probably the most significant part of the project.
- The more questions you ask of them, the better prepared they will be to have the right person at the table.
- Sometimes the stars just align.

WHAT ADVICE DO YOU HAVE FOR OTHERS:

- For anyone that has not put out an RFP yet for NG Core Services, you need to keep the DoD in mind as you prepare your bid response; or other non-traditional PSAPs such as the DoI (national parks), University PSAPs, State Police and the like.

ARE THERE ANY OTHER COORDINATED ACTIVITIES BEYOND NG?

- GIS readdressing, coordination and integration into statewide system
- Mutual aid agreements

➢ Future Activity

- On-going training activities
- Continuity of Operations Planning (COOP) involving military and civilian PSAPs
- Training Exercises and COOP activation simulations
- GIS state integration

First quarter 2021-additional military outreach and coordination will be initiated.

California

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STATE PROFILE

EXECUTIVE DIRECTOR 9-1-1 PROGRAM:
Budge Currier, Branch Manager

CONTACT

PHONE: (916) 657-9369

WEBSITE:
https://www.caloes.ca.gov/cal-oes-divisions/public-safety-communications/ca-9-1-1-emergency-communications-branch

EMAIL: CA911Branch@caloes.ca.gov

IMPORTANT LINKS

9-1-1 Advisory Committee:
Governor's Office of Emergency Services State 9-1-1 Advisory Board
https://www.caloes.ca.gov/PublicSafetyCommunicationsSite/Documents/9-1-1AdvisoryBoardMembers.pdf

Legislation & Reports: California (CA) Revenue and Taxation Code Sections 41001 – 41176, known as the Emergency Telephone Users Surcharge Act
http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=RTC&sectionNum=41001

CURRENT ACTIVITIES AND PROGRAMS

Subject Title:
Deployment timeline

- Statewide prime–Aug 2019–Jul 2021
- Northern region–Aug 2019–Jul 2021
- LA region–Aug 2019–Jul 2021
- Southern region–Aug 2019–Jul 2021
- Central region–Aug 2019–Jul 2021
- All selective routers decommissioned–2022

NG9-1-1 STATUS

ESInet Migration Progress:
By April, 2021, 100% of all PSAPs (232) have NG9-1-1 IP circuits deployed and LTE circuits for redundancy.

# of Primary PSAPs/ECCs:
438

9-1-1 Funding:
Pertinent California Law relating to the reimbursement of 9-1-1 equipment and services can be found in the California (CA) Revenue and Taxation Code Sections 41001 – 41176, known as the Emergency Telephone Users Surcharge Act. The laws indicate that the State of California, Governor's Office of Emergency Services, Public Safety Communications, California 9-1-1 Emergency Communications Branch (CA 9-1-1 Branch), shall manage the State Emergency Telephone Number Account (SETNA) and reimburse PSAPs for equipment and services necessary for the delivery and answering of 9-1-1 calls in the State of California. **Cal OES has published the funding policy for 9-1-1 in the Operations Manual that is posted on their website www.caloes.ca.gov/911.**

Statewide NG9-1-1 Plan: https://www.caloes.ca.gov/PublicSafetyCommunicationsSite/Documents/0001-Next%20Generation%209-1-1%20Transition%20Plans.pdf

Allowable Expense from 9-1-1 Funds: Lease, purchase, maintenance of CPE hardware and software, approved training & travel, program administration, and equipment and services necessary for the delivery and answering of 9-1-1 calls.

County PSAP Contacts: https://www.caloes.ca.gov/PublicSafetyCommunicationsSite/Documents/CountyCoordinatorListOctober2020.pdf

Mission Statement:
The Public Safety Communications 9-1-1 Emergency Communications Branch mission is to enable PSAPs to provide the fastest, most reliable, and cost-effective access to emergency services for any 9-1-1 caller in California from any communications device.

NG9-1-1 PROGRESS

SECURITY	Transitional
PSAP/ECC CALL HANDLING	Transitional
NETWORK	Transitional
CORE SERVICES	Transitional
ROUTING & LOCATION	Transitional
OPERATIONS	Transitional
MSAG TO GIS DATA SYNC COMPLETE	Transitional
GOVERNANCE	Intermediate

NOTE: The California maturity status is expected to change dramatically in 2021 as more and more progress is made on transition.

California Profile

Established on September 19, 1947, the Public Safety Communications (PSC) division of the CALOES branch is responsible for the statewide microwave network and public safety radio communications systems used by the State's public safety agencies' first responders. This responsibility includes design, installation, maintenance and repair of all systems. In addition, PSC is responsible for the administration and oversight of the State Emergency Telephone Number Account (SETNA) used to fund 9-1-1 in California, and for the design development of the statewide network that supports delivery of 9-1-1 calls to the State's 438 Public Safety Answering Points (PSAPS). PSC is responsible for Emergency Support Function 2 (ESF-2) CA-ESF2 and coordinates status of communication systems and facilitates and provides resources needed to sustain and restore the public communications infrastructure during emergencies. PSC also serves as California's point of contact for the management of public safety broadband solutions, including National First Responders Network (FirstNet) that is being designed and implemented to provide broadband data to the emergency service personnel on a nationwide basis.

The CALOES public safety mission is to ensure that quality telecommunications services and commodities are provided to all state agencies in the most cost-effective, efficient, and timely manner possible. This includes maximizing the use of state resources, and the consolidation and joint use of telecommunications systems and services where operationally, technically, and economically feasible.

➢ General NG911 Statewide Status

The California transition plan to statewide NG9-1-1 system follows statutory guidelines and is managed through defined practices. During the transition, Cal OES will:

- assist PSAPs to ensure that guidelines and best practices are followed by all vendors during all transition and implementation activities;
- develop and implement a standard change management process that PSAPs will use if the vendor requests any changes during migration;
- assist PSAPs in the implementation of and transition to NG9-1-1 within statutory guidelines;
- create a stakeholder engagement and management framework to support migration;
- establish controls on all assets, resources, responsibilities, and activities during transition and implementation;
- develop guidelines to ensure that the knowledge transfer from the vendor to PSAPs occurs in an efficient and effective manner;
- assist PSAPs in the establishment or modification of any rules for any releases, version updates; or changes to the System; and

- assist PSAPs in ensuring that quality assurance and quality control measures performed by the vendor are met for all components of the NG9-1-1 system.

➢ Interaction with Military PSAP Status

According to a letter sent to the Department of Defense in October, 2018, (see Appendix D) the California transition to Next Gen 9-1-1 will impact DoD facilities in three ways.

(1) Cal OES is working toward connecting each DoD PSAP to a Next Gen 9-1-1 Core Service provider via an Emergency Services IP Network connection. Today, DoD PSAPs are connected via CAMA trunks to a Selective Router (SR). As 9-1-1 traffic into the SR is transitioned to the Next Gen 9-1-1 Core Service, the SR will be no longer required and Cal OES will no longer fund any SR services. Cal OES will fund all Next Gen 9-1-1 Core Services, and Next Gen 9-1-1 Trunk services or ESInet connections at no cost to the DoD. Any DoD PSAP that is unable to connect to the Next Gen 9-1-1 Core Services and still requires the 9-1-1 SR services, may incur the cost of the SR services when the SR is no longer needed to support 9-1-1 traffic for California.

(2) Cal OES will need to connect each DoD telephone switching center into a Next Gen 9-1-1 Core Service provider. Cal OES will provide a point of interface that is capable of supporting SS7 or SIP signaling. Cal OES is also able to provide a Legacy Network Gateway that can support legacy telephone interfaces. Similar to the cost incurred by DoD PSAPs that cannot connect, any DoD telephone switching center that is unable to connect, may incur the cost of the SR services or CAMA trunks when the SR is no longer needed to support 9-1-1 traffic for California.

(3) Cal OES will be converting the Master Street Address Guide (MSAG), Automatic Number Information (ANI), and Automatic Location Information (ALI) into a geo-encoded dataset. Cal OES will also update PSAP shape file boundaries to include all California DoD PSAPs. They requested the assistance of DoD to validate PSAP boundaries. Cal OES will also develop an interface that will be used to update, maintain, and verify the geocoded data within a CA statewide GIS database. While Cal OES will provide funding and resources to support the project, Cal OES notified DoD of the need for DoD PSAP managers and DoD personnel to provide the data and updates needed to develop and support this effort.

➢ Future Activity

- Continual progress on migration to NG9-1-1
- Moving call processing equipment to the cloud
- Greater PSAP NG9-1-1 integration including NG9-1-1 ready Call Handling Equipment (CHE)
- Text to 9-1-1 integration to PSAP CHE
- Continued GIS data conversion to NG9-1-1 compatible format

- NENA i3 routing with device-based location and PSAP boundaries
- Preliminary trial results demonstrated 100% of the calls routed using device location were routed to the correct PSAP
- Migration to cloud-based CHE through the Cal OES contracts that can be used to fund CHE for military installations

El Paso-Teller County 9-1-1 Authority Colorado

STATE PROFILE-FOCUS ON EL PASO-TELLER COUNTY 9-1-1 AUTHORITY

Carl Simpson, CEO, El Paso-Teller County 911, Colorado Springs

CONTACT

PHONE: (719) 785-1900

WEBSITE: http://elpasoteller911.org/

EMAIL: info@elpasoteller911.org
carl.p.simpson@gmail.com

IMPORTANT LINKS

EPTC 9-1-1 Board:
http://www.elpasoteller911.org/150/9-1-1-Authority-Board

Legislation & Reports:
https://sites.google.com/a/co911rc.org/co911rc/resources/leg-and-reg-page

NG9-1-1 Strategic Plan:
http://elpasoteller911.org/DocumentCenter/View/822/El-Paso-Teller-County-911-Strategic-Plan-2016---2020-

Allowable Expense from 9-1-1 Funds: Lease purchase, maintenance of CPE (hardware and software); Lease, purchase, maintenance of CAD (hardware and software); Lease, purchase, maintenance of building and facilities; Salaries; Training; Program Administration; Travel; Reimbursement to other Law Enforcement providing dispatch; Lease, purchase, maintenance of radio dispatch networks

CURRENT ACTIVITIES AND PROGRAMS

The El Paso-Teller County 9-1-1 Authority is governed by a board of nine members that work to provide equipment and services to the seven 9-1-1 call taking and dispatch centers in the two-county region. The Authority provides Quality Assurance, Training, Information Technology Services, Geographic Information Services, and Public Education.

NG9-1-1 STATUS

ESInet Migration Progress:
This element on the National Profile Database tracks the progress of ESInet deployments and PSAP connectivity to ESInets for call delivery by state. It is not broken down by county or local 911 jurisdiction. The category includes PSAPs that are receiving IP calls from an ESInet but have a Legacy PSAP Gateway (LPG) converting the calls back into analog to be processed by the CPE. For Colorado it was reported that 9% or eight PSAPs where connected to ESInets. Seven of those are in the El Paso-Teller County 911 Authority jurisdiction

# of Primary PSAPs/ECCs:
Seven

9-1-1 Funding:
9-1-1 is funded by a tariff of $1.35 that is applied to wireline and wireless telephone bills.

NG9-1-1 PROGRESS

SECURITY	Intermediate
PSAP/ECC CALL HANDLING	Transitional
NETWORK	Intermediate
CORE SERVICES	Transitional
ROUTING & LOCATION	Transitional
OPERATIONS	Transitional
GIS	Transitional
GOVERNANCE	Transitional

Colorado Profile

➢ Fort Carson/El Paso Teller County

The counties of El Paso and Teller in Colorado have established a joint governance 9-1-1 authority and have developed a regional approach to 9-1-1 services and created the El Paso-Teller County 911 Authority (the EPTC 911 Authority) as the overarching governance body. The Authority itself is organized under an intergovernmental agreement (IGA) initially executed in 2000 and last updated in 2018 (see Appendix I). Fort Carson became a signatory to the agreement in 2019.

> There are people around the table trying to find a way to say "yes" rather than finding a way to say "no"…
>
> *Carl Simpson CEO, El Paso-Teller County 911*

The EPTC 9-1-1 Authority mission is to provide the public reliable access to public safety agencies by managing high quality, redundant, secure, and cost effective 9-1-1 services while also providing exceptional customer service to Authority stakeholders.

Services provided by Authority include 9-1-1 systems administration, quality assurance (QA), on-going and refresher call taker and dispatcher training, information technology (IT) support, mapping, geographic information services (GIS), 9-1-1 public education (Public Education) programs, and facility management. The Authority provides systems and services including 9-1-1 call routing, CAD systems, telephones, recorders, training, quality assurance, and public education.

The EPTC 9-1-1 Authority serves as an administrative partner to the seven PSAPs in the two-county service district, including the City of Colorado Springs, Cripple Creek, El Paso County, Fort Carson, Peterson Air Force Base, Teller County, and Woodland Park. The Fort Carson PSAP/ECC is a consolidated dispatch center and mirrors the capabilities of the civilian PSAPs in the County. Law enforcement services on-base are provided by the Fort Carson Police/Provost Marshal Division with fire and EMS services provided by Fort Carson Fire and Emergency Services (FCF&ES). There are five fire stations located on the base installation. Law enforcement, fire, and EMS services all fall under the Directorate of Emergency Services.

Automatic aid and mutual aid agreements[38] exist among the FCF&ES agencies in the area, including the Fort.

[38] Under the automatic aid agreements in place, one jurisdiction can directly dispatch resources belonging to another jurisdiction without filing a formal request for assistance. The mutual aid agreements require that a request be made whenever assistance is required.

The partnership between Fort Carson and the EPTC 911 Authority ensures that no capability gap exists between civilian first responders in the region and the Army first responders located on the base. Under the EPTC structure and policies, Fort Carson's PSAP is considered on an equal footing with the civilian facilities the Authority serves and therefore qualifies for financial support under a funding agreement that was recently renewed.

➢ Interaction with Military PSAPS

CURRENT ACTIVITIES:

- The EPTC 9-1-1 Authority is executing an NG9-1-1 migration as defined in their strategic plan. Fort Carson's PSAP is connected to the regional ESInet, making it one of the first DoD installations to reach that NG9-1-1 milestone.
- Collaboration for the partners regarding NG911 is an ongoing process — the heads of the region's PSAPs meet on a bi-monthly basis to review performance and plan for future enhancements to their environment.

BIGGEST CHALLENGE:

- Turnover of military personnel
- Necessity for re-education

> "Callers to our PSAP are in great hands thanks to the collaboration and support that we have received from the 911 Authority"
>
> Dawn Lucero, Fort Carson PSAP Manager

WHAT HAVE YOU LEARNED:

- Show respect for the military point of view and requirements
- Become genuinely interested in their needs
- Remain friendly; don't condemn or criticize
- Ensure the military feels part of the solution

WHAT ADVICE DO YOU HAVE FOR OTHERS:

- Do not be deterred; progress is often slow
- Remember, it is all about improving service to someone on their worst day

ARE THERE ANY OTHER COORDINATED ACTIVITIES BEYOND NG?

- Training-provided to all PSAPs
- COOP-coordination of individual plans to ensure all support each other appropriately
- Exercises-support the agencies undertaking tabletop and simulated exercises
- Succession planning support

➢ Future Activity

The EPTC is phasing in NG911 deployment across the region, including Fort Carson. This assists in mitigating risks and allows system components to "burn in" before adding new components. Upcoming enhancements planned for the near-future include the following:

- ***NG911 CHE***. New CHE with an integrated mapping capability will be deployed to every PSAP in the region. NG911-compliant CHE is required to ensure the full capability NGCS being delivered over the ESInet.
- ***Centralization of CAD***. A centralized environment is planned to replace the separate CAD systems currently located at each PSAP. This will result in tightly integrated environment and make dedicated testing and training CAD environments available to all PSAPs.
- ***Fort Carson GIS***. The EPTC's GIS team is working with the Fort Carson GIS team to make the base GIS data compatible with NENA NG911 GIS requirements. This will allow the Fort's map to be integrated with the regional map in the NG911 solution.
- ***Location-based Dispatching***. Mapping will be updated to support x, y coordinates to deliver NG911 enhanced location information.
- ***Text-to-9-1-1***. The EPTC will deploy an NG911-compliant, integrated text-to-9-1-1 capability to every PSAP in the region.
- ***Integration of Other DoD Installations***. The EPTC is planning to deliver the same benefits to Peterson Air Force Base and the Cheyenne Mountain Complex.

North Carolina

9 - 1 - 1

STATE PROFILE

Dept of Information Technology (NCDIT)

EXECUTIVE DIRECTOR 9-1-1 PROGRAMS:
L. V. "Pokey" Harris ENP

CONTACT

PHONE: 919-754-6621

WEBSITE: https://it.nc.gov/about/boards-commissions/nc-911-board

EMAIL: pokey.harris@nc.gov

IMPORTANT LINKS

NC9-1-1 Board:
https://it.nc.gov/about/boards-commissions/nc-911-board

Legislation & Reports:
https://it.nc.gov/about/boards-commissions/nc-911-board/911-legislation-reports

https://files.nc.gov/ncdit/documents/NCGS%20143B-1400.pdf

Statewide NG9-1-1 Plan:
https://files.nc.gov/ncdit/12072018ApprovedStatePlan.pdf

Allowable Expense from 9-1-1 Funds:
https://files.nc.gov/ncdit/documents/files/09222017%20Approved%20Use%20of%20Fund%20List.pdf

PSAP/ECC Contacts:
https://it.nc.gov/about/boards-commissions/nc-911-board/primary-public-safety-answering-points

CURRENT ACTIVITIES AND PROGRAMS

- 911 service guidance and monitoring
- NG911 planning
- Fund administration and PSAP allocation
- 911 education and training
- 911 Standards

NG9-1-1 STATUS

ESInet Migration Progress:
54 systems currently live on ESInets; 69 additional systems in transition status and 4 additional approved for migration
https://nconemap.maps.arcgis.com/apps/opsdashboard/index.html#/ca70ca087c084a35ab644ea0b693ffcb

# of Primary PSAPs/ECCs or 9-1-1 jurisdictions:
115

9-1-1 Funding:
https://it.nc.gov/about/boards-commissions/nc-911-board/911-fund

NG9-1-1 PROGRESS

SECURITY	Foundational
PSAP/ECC CALL HANDLING	Transitional
NETWORK	Transitional
CORE SERVICES	Transitional
ROUTING & LOCATION	Transitional
OPERATIONS	Intermediate
MSAG TO GIS DATA SYNC COMPLETE	Jurisdictional
GOVERNANCE	Jurisdictional End State

North Carolina Profile

The 911 Board was created to consolidate North Carolina's enhanced 911 system under a single board with a uniform 911 service charge to integrate the state's 911 system, enhance efficiency and accountability and create a level competitive playing field among voice communication technologies. The 911 Board manages all revenues paid into the 911 Fund, establishes procedures for disbursement of funds and advises all voice communications service providers and eligible counties of such procedures. The North Carolina 911 Board is housed in the N.C. Department of Information Technology. The 911 Board is obligated to report to the Joint Legislative Commission on Governmental Operation, Revenue Laws Study Commission and Joint Legislative Utility Review Commission in February of each odd-numbered year. The report must include:

- Receipts
- Expenditures
- Results of PSAP Investigations

The State Auditor has the authority to perform audits on the 911 Board, which **must be** done at least every two years.

➢ General Statewide/Local NG911 Status

- Cybersecurity assessment is 50% complete throughout the state.
- ESInet implementation and local jurisdiction transition is 50% complete.
- GIS conversion is under contract with outside vendor for statewide conversion. This project is being managed and administrated by the state GIS program, not the 911 program.

➢ Interaction with Military PSAPS

CURRENT ACTIVITIES: The state 911 program is actively engaged in conversation with Camp LeJuene which is moving forward with interconnection to the statewide ESInet.

BIGGEST CHALLENGE:

- The changing leadership on the base;
- Consistency in who shows up for meetings;
- Biggest challenge is working with the commander;
- Obtain a solid point of contact (POC). It is essential that this should be someone who is the same throughout the project; it will be necessary to convince the military that this POC cannot be a round robin assignment; you can make great progress once you find the right person to deal with, within the military structure.

WHAT HAVE YOU LEARNED:

- Understanding the military command structure is the first important step.
- Treat the military PSAP just like any other county PSAP.

- The military MUST embrace civic addressing.

WHAT ADVICE DO YOU HAVE FOR OTHERS:

- Be patient. Don't give up.

ARE THERE ANY OTHER COORDINATED ACTIVITIES BEYOND NG?

- COOP-handled on a case by case basis per each jurisdiction; no statewide direction.
- Exercises handled on a case by case basis per each jurisdiction; no statewide direction.
- GIS – The military is not addressed the way they need to be for NG; State GIS office and the state GIS vendor are coordinating entry of all local jurisdiction GIS data which is going superbly, but, how to integrate military is more difficult.
- There is a robust DATA HUB program also underway which was offered to military to work with vendor; Camp Lejeune is first to upload data.

➢ Future Activity

- Ft. Bragg will be the next major CAD project and will likely connect with state core services provider network after January 1, 2021.
- Seymour Johnson AFB-talking with DoD and DISA for use of DODIN with a gateway; must certify their they product.
- NC statewide core services provider contract was offered to military for one time and recurring costs, to integrate NG and to be able to interoperate between local PSAP jurisdictions and military PSAP.
- State continues to facilitate conversations between the core services provider and the military.

Virginia-USAG Fort Lee

USAG Fort Lee wins partnership award for joint 911 emergency dispatch system

Jefferson Wolfe Deputy Public Affairs Officer

Nov 13, 2020

The Army has selected Fort Lee as a 2020 Community Partnership Award recipient in recognition of an Inter-Governmental Support Agreement with Prince George County, Virginia, that saved money and improved response times in emergencies.

The award recognizes the significant impact community partnerships make to readiness, modernization, and to the Soldiers and families of the Army.

Locally, the partnership established in February 2019 allowed the Fort Lee Directorate of Emergency Services to upgrade and share the neighboring community's 911 Computer Aided Dispatch System and add a combined electronic emergency response network for both jurisdictions.

"It was a huge accomplishment for us and Prince George as a joint venture," said Lt. Col. Robin Pinckney, chief of Fort Lee's Directorate of Emergency Services. "It was a big win for everyone."

Prince George had been using their CAD system since 2006. By combining with Fort Lee, it helped both departments make better use of available funding and improve their interoperability, said Capt. Jessica Deaton, the operations officer for DES.

For Fort Lee specifically, the new CAD system decreased dispatch times significantly and made overall responses to emergencies faster, she said.

In the past, Fort Lee dispatchers had to hand write details of a complaint into the log and then call police, firefighters or EMS. Now, they can start the dispatch immediately while continuing to type details into the system as the rescue forces respond. The CAD system also will read the notes out loud in the emergency vehicle so the responder doesn't have to stop to read what the dispatcher is inputting.

Being combined with Prince George County also allows the Fort Lee dispatch staff to see what other local departments are doing and respond with mutual aid, if needed, Deaton said. The closer

coordination helps both sides collaborate when Fort Lee police arrest someone who has an outstanding warrant and must transfer the offender to the civilian authorities.

Furthermore, the system helps in keeping Fort Lee aware of what's going on outside the post, especially in circumstances where officer safety is involved and the on-post police can assist, Deaton said.

The electronic 911 system is an upgrade that is required nationwide, she emphasized. By working together on a combined system, Fort Lee and Prince George County were able to save each other more than $485,000.

For the community member, there are a couple of advantages to this additional technology as well. First, the system can now pinpoint the location of a cellphone emergency call, whereas in the past, the dispatcher had to get the information from the caller. That equates to emergency personnel knowing immediately where they need to go.

Also, the e-911 system can accept texts, Deaton said. This is useful, especially for younger people who prefer to communicate via that means as opposed to making a voice call.

The Army Community Partnership Program promotes the pursuit of exceptional cooperative relationships by all garrisons now and well into the future. The awards continue to recognize mutually beneficial agreements between the Army and communities that enhance readiness, contribute to modernization, support Soldiers and their families, and improve relationships with the community.

https://www.fortleetraveller.com/news/usag-fort-lee-wins-partnership-award-for-joint-911-emergency-dispatch-system/article_653e2f74-25ba-11eb-9398-a726d4a9120e.html

APPENDIX C – ESTIMATED LEGACY SELECTIVE ROUTER MIGRATION SCHEDULE BY STATE

Data Source: National Association of State 911 Administrators, 2020. Please be advised that the dates provided are rough estimates from state agencies and may change as progress toward NG911 deployment is made.

State	Actual	2021	2023	2025	2027	2029	After 2030	None Known	Unknown	Complete
Alabama	2021	x								
Alaska	2030						x			
Arizona	2025			x						
Arkansas	2025			x						
California	2022		x							
Colorado	none							x		
Connecticut	2023		x							
Delaware	none							x		
District of Columbia	2021	x								
Florida	2027				x					
Georgia	2025			x						
Hawaii	2027				x					
Idaho	2030						x			
Illinois	2025			x						
Indiana	2021	x								
Iowa	2030						x			
Kansas	none							x		
Kentucky	2025			x						
Louisiana	2035						x			

State	Actual	2021	2023	2025	2027	2029	After 2030	None Known	Unknown	Complete
Maine	none							x		
Maryland	2022		x							
Massachusetts	2018									x
Michigan	2024			x						
Minnesota	none							x		
Mississippi									x	
Missouri	2027				x					
Montana	2030						x			
Nebraska	2024			x						
Nevada										
New Hampshire	none							x		
New Jersey	2023		x							
New Mexico	2030						x			
New York	none							x		
North Carolina	none							x		
North Dakota	2027				x					
Ohio	none							x		
Oklahoma	2023		x							
Oregon	2027				x					
Pennsylvania	2023		x							
Rhode Island	2022		x							
South Carolina	2030						x			
South Dakota	2030						x			
Tennessee	2023		x							

State	Actual	2021	2023	2025	2027	2029	After 2030	None Known	Unknown	Complete
Texas	2023		x							
Utah	2021	x								
Vermont	2007									x
Virginia										
Washington	2014									x
West Virginia	none							x		
Wisconsin	none							x		
Wyoming	2030						x			

APPENDIX D – CALIFORNIA OFFICE OF EMERGENCY SERVICES LETTER TO FEDERAL PSAPS

Please see the following pages.

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EDMUND G. BROWN JR.
GOVERNOR

MARK S. GHILARDUCCI
DIRECTOR

Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

October 26, 2018

Mr. Chris Woehler
Director, Public Safety Communications Programs and Architecture
C4 Directorate, Office of the CIO
Department of Defense
MARK Center (room 11E08)
Arlington VA 22350-1900

SUBJECT: NOTICE OF NEXT GENERATION 9-1-1 TRANSITION PLAN FOR CALIFORNIA

Mr. Woehler:

The purpose of this letter is to formally communicate the Governor's Office of Emergency Services' (Cal OES) transition plan to Next Generation 9-1-1 (Next Gen 9-1-1) and the potential impact on Department of Defense (DoD) Public Safety Answering Points (PSAPs) and telephone switching centers serving DoD facilities in California. Cal OES has developed and published a detailed Next Gen 9-1-1 transition plan. The plan is available on our website www.caloes.ca.gov/911. The transition to Next Gen 9-1-1 is underway and Cal OES anticipates project completion by 2022.

The transition to Next Gen 9-1-1 will likely impact DoD facilities in three significant areas. First, Cal OES will need to connect each DoD PSAP to a Next Gen 9-1-1 Core Service provider via an Emergency Services IP Network connection.. Today, DoD PSAPs are connected via CAMA trunks to a Selective Router (SR). As 9-1-1 traffic into the SR is transitioned to the Next Gen 9-1-1 Core Service, the SR will be decommissioned and Cal OES will no longer fund any SR services. Cal OES will fund all Next Gen 9-1-1 Core Services, and Next Gen 9-1-1 Trunk services at no cost to the DoD. Any DoD PSAP that is unable to connect to the Next Gen 9-1-1 Core Services and still requires the 9-1-1 SR services, may incur the cost of the SR services when the SR is no longer needed to support 9-1-1 traffic for California.

Second, Cal OES will need to connect each DoD telephone switching center into a Next Gen 9-1-1 Core Service provider. Cal OES will provide a point of interface that is capable of supporting SS7 or SIP signaling. SIP will be the desired connection protocol between the DoD telephone switching centers and the Next Gen 9-1-1 Core Service provider. Similar to the cost incurred by DoD PSAPs that cannot connect, any DoD telephone switching center that is unable to connect, may incur the cost of the SR services or CAMA trunks when the SR is no longer needed to support 9-1-1 traffic for California.

Third, Cal OES will be converting the Master Street Address Guide (MSAG), Automatic Number Information (ANI), and Automatic Location Information (ALI) into a geo-encoded dataset. This dataset will use Emergency Call Routing Function (ECRF) to route 9-1-1 calls in the Next Gen 9-1-1

environment. Cal OES will also update PSAP shape file boundaries to include all California DoD PSAPs. We will need the assistance of DoD to validate those PSAP boundaries. Cal OES will also develop an interface that will be used to update, maintain, and verify the geocoded data within a CA statewide GIS database. While Cal OES will provide funding and resources to support the project, Cal OES will need DoD PSAP managers and DoD personnel to provide the data and updates needed to develop and support this effort. Cal OES anticipates that the development of the aforementioned CA statewide GIS database will begin in early 2019, and will be completed within 12 months.

Throughout the transition to Next Gen 9-1-1, coordination with every California DoD PSAP will ensure a smooth transition. Cal OES is requesting DoD to provide a point of contact for each DoD PSAP and a point of contact to coordinate DoD activities. Please feel free to contact me with any questions at budge.currier@caloes.ca.gov or (916) 657-9911.

Sincerely,

Budge Currier
9-1-1 Branch Manager

APPENDIX E – NENA ENHANCED PSAP REGISTRY AND CENSUS

The EPRC is a secure database, web portal, and map that contains information about PSAPs throughout the United States. This central database is intended to fulfill the NENA PSAP Registry's original purpose of supporting PSAP and 911 authority personnel to locate and contact other PSAPs during critical transfer situations.

Authorized NENA EPRC users can access a secure searchable browser-based online database and map viewer that displays 911 PSAP contact information

The EPRC is available at no cost to users from verified PSAPs (civilian and military), 911 authorities, and other verified public safety entities. To request access, please send an email to: 911eprc@nena.org.

The following information should be included in the email:

- The person entering registration information name
- The PSAP name or related organizational entity you are associated with
- The relationship of the person entering information to PSAP operations (PSAP manager, County Coordinator, etc.)
- PSAP address, city, state
- PSAP county name
- Contact telephone number
- Email address of person entering information
- A list of names, email addresses, and positions of other users from your organization the PSAP would like to request access for (for example 911 telecommunicators, other supervisors, director, training coordinator, etc.)

The PSAP must be an authorized NENA EPRC user to access the database viewer. If you do not have NENA assigned EPRC credentials but are employed by a PSAP or 911 authority, you may request access**.** Follow the instructions above for requesting access.

NENA also offers PSAP registry data to non-governmental, commercial private users, such as call centers and services that may encounter customers needing assistance who believe they have an emergency. This data is supplied for a fee, after NENA has vetted the potential purchaser organization. These fees help support the costs involved in providing and maintaining the PSAP Registry. NENA states this data is not sold for marketing purposes.

The EPRC is not mandatory. However, participating in the ERPC benefits both the PSAP and neighboring PSAPs, and can help to save lives and protect property. The EPRC is a system of engagement designed specifically by NENA to support PSAPs. Participation is strongly encouraged.

Whenever PSAP data changes, such as new phone numbers, new boundary information, new agencies or communities served, etc., the PSAP should update their registered information.

The EPRC is an immensely important tool for all PSAPs to obtain the most accurate and complete information possible.

APPENDIX F – MASTER FCC 911 PSAP REGISTRY

In December 2003, the FCC began collecting data to build a registry of PSAPs. For its purposes, the FCC defines a primary PSAP as a PSAP to which 911 calls are routed directly from the 911 Control Office, such as, a selective router or 911 tandem. A secondary PSAP is defined as a PSAP to which 911 calls are transferred from a primary PSAP. The Master PSAP Registry database serves as a tool to aid the Commission in evaluating the state of PSAP readiness and E911 deployment. A link to the PSAP registry can be found at: https://www.fcc.gov/general/9-1-1-master-psap-registry.

The Commission updates the Registry periodically as it receives additional information.[39] For further information concerning the FCC's Master PSAP Registry and carrier reporting requirements, or to notify the Commission of changes to the PSAP Registry, contact Timothy May at Timothy.May@fcc.gov or 202-418-1463.

[39] Note: The FCC PSAP Registry lists PSAPs by an FCC assigned identification number, PSAP Name, State, County, City, and provides information on any type of record change and the reason for updating the record. The registry includes a column indicating the date on which individual PSAP information was modified.

APPENDIX G – MASS WARNING AND NOTIFICATION

Mass Warning Notification System[40]

The EMWN program's purpose is to allow local 911 PSAPs to provide critical information on military incidents to one single DoD entity who will be responsible for warning all military personnel within a predetermined radius, as well as notifying all appropriate DoD leadership.

A secondary, but equally significant goal, is to enhance communication between the local PSAPs in the surrounding community and the DoD for incidents involving all military personnel—including those who do not work within traditional DoD "fence lines" (i.e., National Guard, Reserve Officers' Training Corps [ROTC], and off-base recruiting offices). PSAPs calling one DoD entity will increase DoD awareness overall—not only the awareness of the local military base—but also provide a national awareness of potential threats and related threats across all geographically dispersed installations. The mass warning and alert system notifies service members, DoD civilians, contractors, and dependents of an emergency detected through a variety of means.

As reported in 911.gov Connects, Issue 4, during the alpha phase (now completed) of the pilot program, 19 PSAPs across the country reported applicable emergencies and related information to the U.S. Northern Command Operations Center (USNORTHCOM) Operations Center, which provides command and control of DoD homeland defense efforts, as soon as local dispatch was completed. During a three-month test period, these PSAPs reported five incidents that would have resulted in a warning or notification and, in one case, called USNORTHCOM only six minutes after the PSAP received the first 911 call.

The next phase of the project will incrementally increase the number of PSAPs involved and, ultimately, all PSAPs across the country will be aware of and can use the EMWN system as a military notification option.

In November 2019, the DoD implemented a new emergency messaging system—Alert! Mass Warning Notification System or MWNS. Currently, both systems are in use. The Army uses ALERT. Other services and the USCG use AtHoc.

It was expected that all 76 Army installations were to migrate to the system by February 2020, and unlike AtHoc, which was optional, Alert! MWNS is mandatory. All DoD military and civilian personnel and contract support personnel whose normal place of duty is on a DoD installation or within a DoD facility, and are considered part of the primary population, are required to register in the Alert! system. These users must ensure that their personal contact information, including after-duty hours contact information (e.g., personal cell phone number or landline numbers, email addresses, home address,

[40] Formerly Enterprise Mass Warning Notification. https://home.army.mil/gordon/index.php/alert

etc.), is entered into the system and regularly updated or verified every 90 days to remain current and accurate.

Integrated Public Alert and Warning System[41]

IPAWS is the Federal Emergency Management Agency's (FEMA) national system for local alerting that provides authenticated emergency information to the public through mobile phones, to radio and television, and on the NOAA Weather Radio. More than 1,500 federal, state, local, tribal, and territorial alerting authorities use IPAWS to convey information about severe weather, missing children, and other public safety emergencies.

IPAWS was established under Executive Order 13407. IPAWS provides the capability to notify the public of impending natural and human-made disasters, emergencies, and public safety information. In a national emergency, the President may use IPAWS to communicate to the public as well. IPAWS delivers timely, geographically-targeted messages during emergencies to save lives and protect property through multiple communication pathways such as the EAS, WEA, NOAA Weather Radio, and other internet-connected devices and services.

The IPAWS Modernization Act of 2015 calls for:

- Upgrading IPAWS to ensure the President can communicate to the public under all conditions.
- Establishing a subcommittee to the National Advisory Council composed of IPAWS stakeholders to expand collaboration and recommend improvements to the system.
- FEMA to submit annual performance reports.

The Act includes 19 additional system and implementation requirements, which FEMA is evaluating and estimating the resources necessary to fulfill "to the extent feasible."

➢ IPAWS Mission

IPAWS is guided by its mission to provide integrated services and capabilities to federal, state, local, Tribal, and territorial authorities that enable them to alert and warn their respective communities via multiple communications pathways.

The IPAWS Program Management Office (PMO) is also guided by FEMA's mission of helping people before, during, and after disasters. Furthermore, IPAWS advances the 2018 – 2022 FEMA Strategic Plan and the agency's strategic imperatives by building a culture of preparedness, readying the nation for catastrophic disasters, and reducing the complexity of FEMA.

[41] https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system

➢ IPAWS Vision

To provide timely alert and warning to the public in the preservation of life and property using the most effective means for delivering alerts that are available at any given time.

Emergency alerts transmitted over IPAWS are sometimes displayed on select digital billboards in areas around the country affected by a respective alert. IPAWS alerts are available to appear on digital billboards in 43 states and have been used in 17 states.

FEMA-defined Event Codes identify the nature of an event. Emergency management must select an Event Code when sending EAS messages, WEAs, and Non-Weather Emergency Messages (NWEMs) (future capability) via IPAWS. The IPAWS Office has created the Event Code Descriptions for Use with IPAWS Fact Sheet and offers examples of how Event Codes appear to the public.

APPENDIX H – PROCESS TASK LIST

MILITARY PSAP / STATE OR LOCAL 911 AUTHORITY NG911 NETWORK INTEGRATION PROCESS TASK LIST

The Process Task List has been jointly developed by representatives from Pierce County 911, JBLM PSAP management, and the state of Washington 911 Program. The Task List showcases the process followed by Pierce County, Washington, to collaborate on planning and integrating JBLM 911 communications with the county 911 system creating an interoperable regional solution for NGCS and an ESInet.

LESSONS LEARNED

By chronicling their processes, tasks, considerations, and challenges, the lessons learned can be replicated to assist other state/local/military applications to advance the transition to NG911. The experiences of the participants are a microcosm of what other states, local jurisdictions, and military operations can expect to experience. Tools are provided to help prepare for and overcome those challenges.

HOW CAN THE PROCESS LIST HELP YOUR STATE BETTER PREPARE FOR INTEGRATING A MILITARY PSAP INTO YOUR STATE OR LOCAL 911 NETWORK?

The intent of the Task List, beginning on the following page, is to provide useful and replicable experiences, lessons learned, and best practices for continued progress in your state or local jurisdiction. The successes and lessons of the Pierce County/JBLM/Washington experience detailed in the Task List contain perspectives, insights, knowledge, and experiences that can guide other parts of the nation and can be useful in paving the way for smoother transitions and more effective implementations of NG911.

STATE / LOCAL / DEPARTMENT OF DEFENSE PROJECT TASK LIST

EXAMPLE

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				Project Start	X/XX/202X				
CATEGORY	TASK	TASK OWNER	AUTHORITY	PRIORITY	START	END	% COMPLETE	DONE	NOTES
GOVERNANCE	**Collaboration**								
	Understand State and Local Jurisdictional 911 Systems and Operations	Military Base						0	• Become familiar with how 911 is managed, funded and structured in the state in which the military installation is located. • Learn who is responsible for strategic planning and decision-making authority related to network design and infrastructure. • Understand how the current legacy 911 network is configured and managed.
	Exchange Information on Base 911 Operations	State/Local Jurisdiction						0	• The state and local 911 authority will need to understand how 911 is handled on the base. • Is there an actual base PSAP or an answering location? • Learn what technology is currently in use on the base for CHE, logging, CAD, radio. • Are there separate telephone systems in addition to the PSAP network (if one exists) for PBXs? • What addressing (building locations, offices and residences) is in use on the base?

	Familiarization with 911 Governance in the State and Local Jurisdiction	Military Base						0	• Consider:
									  • Who has responsibility for 911 network/operations in the state/ county?
									  • Who has the necessary approval authority?
									  • Who in the military has authority to approve of the implementation?
									  • Funding -who pays for what?
									  • What reporting authority or requirements exist?
									  • Are there any legal requirements or restrictions to be considered?

	Familiarization with the Military Emergency Communications and Operations	State/Local Jurisdiction						0	• Understand the command structure/responsibility on the military installation; remember it can be different for each branch and each type of base. • Who is the executive agent for the military? • Is a funding stream of any concern? • What legal requirements exist?
	Identify Influencers/Project Champions	State/Local Jurisdiction Military Base						0	• Cultivate relationship with key decision-makers; offer to inform and provide benefits of collaboration and integration; identify those influential individuals who are needed to keep the project on track and can assist with progressing implementation. • Identify blockers and challengers who need to be informed and influenced.

STATE / LOCAL / DEPARTMENT OF DEFENSE PROJECT TASK LIST

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				Project Start	X/XX/202X				
CATEGORY	TASK	TASK OWNER	AUTHORITY	PRIORITY	START	END	% COMPLETE	DONE	NOTES
	Data Gathering	State/Local Jurisdiction Military Base						0	• Obtain contact information for both the state and local 911 authority(s) and the military base personnel involved in the project • Conduct a high-level equipment assessment for general understanding of what is operational today. • Determine NG911 implementation status (both state/local and military). • Understand the physical location of military PSAP and local 911 facilities.
	Funding Discussion	State/Local Jurisdiction Military Base						0	• Discuss cost allocation • Determine who will own and manage various system elements? • Are In-kind services to be considered? • Is an MOA required or desired to delineate and codify agreements? • Define the one-time transition costs versus on-going costs • Share information about budget cycles and procurement requirements. • Can state 911 fees be used or are they precluded from being used?
	Relationship and Process Methodology Identified	State/Local Jurisdiction Military Base						0	• How do the parties want to approach process methodology? • No connectivity; no discussion. • State or local 911 authority provides full connectivity access to the base PSAP network • State or local 911 authority provides a demark for the base PSAP to connect to their NG gateway and base implements their own network. • State or local 911 authority owns and operates all technology and establishes equipment that connects the military PSAP to the state or regional.
	Threats and Opportunities Identified	State/Local Jurisdiction Military Base						0	• What are the benefits of interconnection for both parties? • What are the consequences on not including the military as part of the NG911 system? • Are there security/Cybersecurity issues to be considered? • Are there other threats or opportunities to be aware of?
	NG911 Education	State/Local Jurisdiction Military Base						0	Consult www.911.gov tools and documents for educational materials: • What does the local jurisdictional PSAP need to know about the integration? • Do any training documents, procedures or requirements need to change and be trained on? • What does the military PSAP need to know about the integration? • Does any of the military training or protocols need to change? • What education is needed on the base for those living and working on the facility?

STATE / LOCAL / DEPARTMENT OF DEFENSE PROJECT TASK LIST

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				Project Start	X/XX/202X				
CATEGORY	TASK	TASK OWNER	AUTHORITY	PRIORITY	START	END	% COMPLETE	DONE	NOTES
	Overcoming Objections and Roadblocks	State/Local Jurisdiction Military Base						0	• Benefits and Consequences tools can be found in Appendix X
	Project Communication Plan	State/Local Jurisdiction Military Base						0	• How will the project task list be managed and communicated to the appropriate authorities? • Does there need to be a formal communication plan that describes the progress and informs the decision-makers of the implementation stages?
TECHNOLOGY	**Preliminary**								
	MOU/MOA User Agreements	State/Local Jurisdiction Military Base						0	• Consider engaging the appropriate legal staff for the DoD branch (such as the Staff Judge Advocate for the Army) of the military base in the development of the MOA/MOU. • County level legal teams should also be consulted on MOA/MOUs requirements and process. • Alignment between state and local requirements and then local to military MOAs will be necessary. • Military partners may need to seek written guidance or authorization from the appropriate command level.
	Submit Service Order to NG911 System Service Provider or Coordinating Agency	State/Local Jurisdiction Military Base						0	• Identify who holds the contract for NG911 services in the state or jurisdiction. This could include the military installation as well. • NDAs are signed so sensitive information can be shared between the state/county and county/military. • Involve the Support Agreements Manager through Resource Management or JAG early in the process. • See Appendix X for samples that might be adapted for your project.
	Conduct Site Survey	NG911 SSP						0	• Conduct a site survey of both the DISA DODIN network connections and infrastructure plan for the state/local 911 jurisdiction. • Joint Interoperability Test Command (JITC) approval will also likely be required.
	Technical Design								
	Identify Demarcation	NG911 SSP						0	• Outcome of site survey should help to identify where is the service provider will provide the "drop."
	Bandwidth Requirements	NG911 SSP						0	• Determining bandwidth requirements is recommended during site survey process and understanding what you physically have today for voice paths will be necessary to determine similar service levels in NG911. • Future plans for service needs or expansion, if known, should also be taken into consideration.

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				Project Start	X/XX/202X				
CATEGORY	TASK	TASK OWNER	AUTHORITY	PRIORITY	START	END	% COMPLETE	DONE	NOTES
	Redundancy and Diversity Design	NG911 SSP						0	• Make sure the network design discussions address reliability and diversity along with who pays for what additional redundancy and diversity might be necessary, required or desired. • Determine what calls will be routed directly to PSAP and what calls go through the PSTN/NG911 network and sent to the DoD PSAP. • Define who pays for what elements and understand what has been contracted for by the state or local jurisdiction already.
	Interface Specifications (SIP/TDM)	NG911 SSP						0	• NG911 system service provider should define all of the processes and interfaces between a ingress network. • Request the interface specifications if not provided.
	Assign IP and URN	NG911 SSP						0	• URN (like a URL) is a Universal Routing Number that assigns an IP address to the PSAP/military installation. • If the network configuration is using a gateway the URN is not necessary, but the configuration may require multiple SIP addresses. • NOTE: Some SIP interfaces may have unique requirements. • NGCS and CHE provider should coordinate.
	Assign PKI/PCA Cert	NG911 SSP						0	• The Public Key Infrastructure is part of the NENA i3.3 standard but are not yet implemented at the time of this publication. • For future reference and understanding, please see the PCA Section in this document.
IMPLEMENTATION	**Initial Steps**								
	Circuit Orders	NG911 SSP						0	• Coordination between whomever supports the installation on the base needs to be coordinated with the NG911 system service provider. • SLAs should define timelines and boundaries.
	Site Equipment Installation (Routers, Switches, Firewall, Gateways etc., as required)	NG911 SSP						0	• NG911 SSP should conduct a site survey • The 911 authority (City/State) and military authority all need approvals to conduct the site survey. • Discuss installation support • Ensure PSAPs real estate is accessible. • Consider power and UPS capacity requirements. • Costs need to be defined along the way and documented. • Testing must be conducted.

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				Project Start	X/XX/202X				
CATEGORY	TASK	TASK OWNER	AUTHORITY	PRIORITY	START	END	% COMPLETE	DONE	NOTES
	Solution Configuration and Provisioning for PSAP	NG911 SSP						0	• The system service provider is responsible for appropriate coordination. Similar steps are necessary at the local level. • Confirming the ALI spill has is picked up by the CAD system as expected. • Any new interfaces may require notification to other providers of systems such as logging or CAD and anything downstream from CHE will need to be checked and tested.
	Documentation								
	Network Design Diagram	NG911 SSP						0	• As built drawings for all connectivity should be required. The "as built" diagrams should include configuration information, graphic representation of the network and routing. • Pre-built and ultimate design drawings as installed should be required and part of the SLA.
	Site Survey Results	NG911 SSP						0	• The site survey should become part of the record to be kept by the entity(s).
	Routing Plans	NG911 SSP						0	• Several routing plans should be discussed - such as PRF; Alternate Routing; Overflow Routing • Routing plans needs to be part of SOPs and COOP. • Be sure to train appropriate staff on PRF. • Routing also needs to be part of outage processes.
	Continuity Of Operations Plan (COOP) Activities Planning	State/Local Jurisdiction Military Base						0	• Develop or update a Continuity Of Operations Plan (COOP). • Continuity of Operations Planning (COOP) should include military partners.
	COOP Exercise Events Inclusion	State/Local Jurisdiction Military Base						0	• Military partners should be included in any planned exercising or training of the COOP.
	Outage Reporting Processes	State/Local Jurisdiction Military Base						0	• Develop a formalized outage reporting policy. • Include the military partners in the planning and the policy.
	State and County Crisis Communication Plans	State/Local Jurisdiction Military Base						0	• Develop a Crisis Communication Plan (CCP) to be activated when service disruption impacts large portions of the population served. • Ensure CCP includes military partners in the notification procedures. .

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CATEGORY	TASK	TASK OWNER	AUTHORITY	PRIORITY	START	END	% COMPLETE	DONE	NOTES
	Communications & Education	State/Local Jurisdiction Military Base						0	• Validate all contact information and develop a process for notification of changes going forward. • Outage reporting procedures at a military PSAP is essentially the same as any other PSAP but the military may have additional internal procedures. • Trouble or outage notification from provider should be considered.
GIS	**(If Applicable)**								
	Conduct pre-SI Provision Data Analysis	NG911 SSP						0	• Discuss need to use GIS rather than rely on traditional building #'s generally found on military bases. • Geospatial routing may be implemented in stages.
	Establish SI Connectivity	State/Local Jurisdiction						0	• GIS implementation will vary from one state/local jurisdiction to another. There is not a one size fits all application or guidance. • There may be a host connection versus and direct spatial interface. Both can be accommodated in NG911.
	Load GIS Data to SI	State/Local Jurisdiction						0	• If applicable, the jurisdiction and military will need to accommodate ETL (Extract, transform, load) process to supply the initial GIS data set for provisioning the ECRF and LVF. • Jurisdiction and military will also need to comply with the error resolution process and maintenance update processes as defined by the NG911 System Service provider or Spatial Interface provider if managed by a different provider.
	Support Production Activities	State/Local Jurisdiction						0	• Frequency of exchange of geospatial files should be determined and agreed upon. • Processes and workflow for the data exchange should be predefined.
LEGACY CONSIDERATIONS	**Legacy ALi (if required) or LDB**								
	Order Service (if out of band service)	State/Local Jurisdiction						0	• This process step may only be required if migrating to a transitional NG911 solution and or no Enhanced 911 solution is in place today.
	Install Modems	911 SSP						0	• This process is managed by the NG911 or 911 System Service provider. • Requires coordination with the Call Handling Equipment provider if the agency is not already supported by Enhanced 911 service.
	Connect Circuits	911 SSP						0	• This process is managed by the NG911 or 911 System Service provider. • Requires coordination with the Call Handling Equipment provider if the agency is not already supported by Enhanced 911 service.

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				Project Start	X/XX/202X				
CATEGORY	TASK	TASK OWNER	AUTHORITY	PRIORITY	START	END	% COMPLETE	DONE	NOTES
	Provision CHE with 512 Format	Local Jurisdiction / CHE Provider						0	• The 512 format discussion will occur when requesting Enhanced 911 Service if the transitional step is required for implementation.` • The jurisdiction will need to engage their CHE provider to provision the data parsing, once the 512 format determination has been made with the ALI database provider (911 SSP).
	Provision Database	911 SSP						0	• No action required by jurisdiction(s)
	Establish MSAG	Local Jurisdiction / 911 SSP / NG911 SSP						0	• The agency may be asked to create a Master Street Address Guide with the support of the 911/NG911 SSP.
	Establish PS/ALI, if required for MLTS	NG911 SSP / 911 SSP						0	• Coordination required between 911/NG911 SSP, 911 jurisdiction(s), and Call Handling Equipment Provider.
	Establish E2 links, if required for WPH1/2	NG911 SSP / 911 SSP						0	• No action required by jurisdiction(s)
	Test	Local Jurisdiction / 911 SSP						0	• Coordination between 911/NG911 SSP, 911 jurisdiction(s), and Call Handling Equipment Provider.
INTERFACES	**Establish Interface**								
	Legacy PSAP Gateway Interface	NG911 SSP						0	• This task requires the 911 jurisdiction(s) to convert IP circuit(s) to gateway analog controller.
	Identify Trunks on PSAP Side	Local Jurisdiction / CHE Provider						0	• This process step is required for provisioning and coordination of Legacy PSAP Gateway's and/or provisioning "virtual trunks" in Native SIP depending on what model is being implemented.
	Match punchdowns @ 66 block	Local Jurisdiction / CHE Provider						0	• This is a task only required with the use of a Legacy PSAP Gateway is required for implementation
	SIP Interface	NG911 SSP						0	• Identify the necessary interfaces for devices used in the communications center such as logging/recording devices, or CAD.
	Perform CHE Upgrades (if required for Native SIP interface)	Local Jurisdiction / CHE Provider						0	• Identify if any call handling equipment upgrades are needed.
	Establish layer 1,2,3 connectivity with provider at demarc	Local Jurisdiction / CHE Provider						0	• CHE provider and/or Installation Network engineers should be engaged to ensure network connectivity is established.

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CATEGORY	TASK	TASK OWNER	AUTHORITY	PRIORITY	START	END	% COMPLETE	DONE	NOTES
TEST	**Testing**								
	Develop / Review Test Plan	NG911 SSP						0	• Lab testing conducted. • Live testing conducted.
	Operational Readiness Testing	NG911 SSP						0	• Operational readiness testing conducted.
	Cut-over / Go- Live	NG911 SSP						0	• Identify the various call types to be tested. • Develop comprehensive test plan.
	Change Management Processes	NG911 SSP						0	• Define and agreed upon a change management process.
TRAIN	**Training**								
	SI User Training	NG911 SSP						0	• This activity will be coordinated by the NP911 SSP, if applicable to the implementation and identified in the Scope of Work (SOW) as part of the contract.
	Operations Dashboard Training	NG911 SSP						0	• This activity will be coordinated by the NP911 SSP, if applicable to the implementation and identified in the Scope of Work (SOW) as part of the contract.
	Policy Routing Function (PRF) Training	NG911 SSP						0	• Develop and conduct formalized training on PRF. • Include processes on trouble reports or reporting issues; changes; NOC contacts; etc.
AFTER-CARE	**After-Care/Other**								
	Database Clean Up	State/Local Jurisdiction						0	• Conduct a comprehensive database clean-up process.

HELP

https://www.vertex42.com/ExcelTemplates/task-list-template.html

About

This task list template provides a simple way to list and track your tasks. It also includes columns for budget and hours. You can delete or add columns and rows as needed. This worksheet was kept simple intentionally. If you would a more advanced way to create a task list for a project, try a Gantt Chart.

Create and track your project schedule easily using the **Excel Gantt Chart Template** by Vertex42.com.

Learn More

More To Do List Templates

Editing the Drop-Down Lists

To edit the drop-down list in the Priority column, select the cells you want to edit then go to Data > Data Validation.

Learn more about Drop-Down Lists

Conditional Formatting

The Priority, % Complete, and Done columns use conditional formatting in different ways. If you change the list of items in the Priority drop-down list, then you may need to edit the conditional formatting rule(s) as well.

To edit conditional formatting rules, go to Conditional Formatting > Manage Rules and select "This Worksheet" to see and edit all the rules.

The Done column is updated automatically. When you enter 100% in the % Complete column, the checkmark should appear in the Done column. You can use the drop-down in the Done column if you prefer.

Learn more about Conditional Formatting

Subtotals in the Budget Column

The Total Budget amount uses the SUBTOTAL(9,sum_range) function, that will ignore other SUBTOTAL functions contained within the sum_range.

HELP

If you want to create subtotals for each project, you can use the SUBTOTAL(9,sum_range) function.

Additional Help

The link at the top of this worksheet will take you to the web page on vertex42.com that talks about this template.

Project Task List Template

By Vertex42.com
https://www.vertex42.com/ExcelTemplates/task-list-template.html

Do not delete this worksheet

APPENDIX I – BENEFITS OF MILITARY/CIVILIAN INTEROPERABILITY

The benefits of collaboration and coordination between state and local 911 authorities and the U.S. military to transition to NG911 can be found on the following three pages, succeeded by the consequences of an uncoordinated transition to NG911 between state and local 911 authorities and U.S. military partners.

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Benefits of Collaboration and Coordination Between State and Local 911 Authorities and the U.S. Military to Transition to NG911

The nation's 911 emergency communications systems require a transition from obsolete legacy technologies to modern IP-based technologies and features—NG911. The transition will result in improved service delivery and a more resilient and reliable 911 system. To realize these benefits, the NG911 transition must be coordinated—including partnerships between DoD installations and state and local 911 authorities.

➢ Enhanced flexibility, resiliency, and survivability of 911 systems

An appropriately funded and coordinated NG911 transition will take advantage of technology advancements that have eluded most military 911 systems. Modern networks and new NG911 services will provide the nation's 911 system with improved flexibility, more robust networks with enhanced survivability, and built-in resiliency—ensuring that all requests for assistance are answered effectively whether on base or by the local community (e.g., supporting recruitment offices). Closing the capability disparity through collaboration assists DoD emergency responder organizations in meeting the requirements of several DoD policies, as well as relevant component-specific policies.

NG911 services will bring improved functionality, enhanced network resiliency, seamless interoperability, improved system integration and compatibility, equal accessibility, and greater capacity for innovation.

➢ Maintaining service parity

Maintaining service parity between civilian and military agencies is more critical in the NG911 environment. Military installations that do not migrate risk becoming islands unable to share emergency information with public safety partners in the communities in which they reside. Lack of integration will result in a greater threat to life and property and degraded capabilities to fulfill obligations under normal response conditions and mutual-aid scenarios. Collaboration between state and local NG911 entities and the military installations within their jurisdictions will ensure compatibility with current and emerging technologies and increased confidence in the 911 system—on the base and in the community.

➢ Increased data sharing—from the 911 caller to the responder

Employing the technological advances readily available in the commercial communications marketplace will enable data and information sharing between military bases and emergency responders in neighboring jurisdictions or other branches of the DoD, facilitating existing mutual-aid agreements. Legacy 911 systems have been fundamentally limited by their inability to receive/share digital data. The NG911 transition will provide new tools to help DoD 911 call-takers and base emergency responders use broadband data to enhance situational awareness, provide more effective and safer emergency response, and better response coordination inside and beyond the "fence line."

➢ Improved response and enhanced operations

Improved Operations: Includes seamless transfers of calls and data between the military and local government communications centers; the ability to overflow 911 calls from another communications center; the ability for a civilian PSAP to directly dispatch emergency service vehicles to incidents inside the base; and enhanced back-up and overflow capabilities that are more flexible and robust.

Improved Response: Installations are better equipped to meet the DoD's vision of providing the same level of emergency services on the base that people enjoy off the base.

➢ Improved safety for physical property assets and personnel through communications interoperability among jurisdictions

A coordinated NG911 transition will result in enhanced 911 services across jurisdictional boundaries, more accurate call routing, faster and more efficient rerouting and transfers, and increased collaboration between the military and local government PSAPs for improved response. A coordinated nationwide integration will help ensure that local and military communications centers are not stymied by the interface between old and new hardware and will improve overall interoperability and response effectiveness.

➢ Improved emergency responder interoperability leads to increased responder safety

Coordinated implementation will improve functionality and interoperability for all emergency responders. An integrated NG911 environment will permit reliable interoperability with responder communication systems, to enable more efficient response to large-scale mass-casualty incidents and natural/manmade disasters.

➢ Alignment with the telecommunications infrastructure transition

As traditional 911 service providers replace old equipment in their networks with modern technology, the traditional methods of 911 call routing will no longer be available. Those remaining using the outdated service will be responsible for paying higher costs. As legacy 911 infrastructure continues to age, replacement equipment becomes more difficult to find, more expensive to replace, and more likely to cause downtime of indispensable 911 service. A coordinated, transition to NG911 will provide authorities with improved, integrated, and interoperable communications with systems in their region.

➢ More efficient use of funds

Coordinated and interoperable deployment of NG911 services will allow state and local governments and their military partners to be better stewards of public and government funds. Shared NG911 deployment will increase efficiencies and reduce the long-term cost burden of operating obsolete legacy technology or dual systems for a prolonged period. Coordinated deployment will generate flexibility in the licensing terms for software and hardware suites, while more effective use of technology resources

will enable virtualization, interoperability, and convergence of applications—all of which likely will reduce overall system costs.

The result is not only greater efficiencies and potentially lower costs, but optimization of investments in systems, maintenance, and technology—all while improving service delivery.

Consequences of an Uncoordinated Transition to NG911 between State and Local 911 Authorities and U.S. Military Partners

The nation's 911 emergency communications systems require a transition from obsolete analog technologies to modern digital technologies, including NG911 systems that will support the myriad ways in which the public and the military communicate. As the DoD delays its NG911 transition due to limited resources or other policy challenges, such systems likely will develop in a piecemeal fashion. Failure to act in a timely and coordinated manner ultimately will cost money and erode trust in one of our country's most important resources.

➢ Lack of coordination prolongs NG911 implementation and leaves the DoD vulnerable to obsolescence and potential loss of 911 service

An uncoordinated, underfunded NG911 transition likely will take more than a decade as many military public safety installations defer implementation due to resource limitations. The result will be inconsistent service, under-served constituencies, and underutilized capabilities until all DoD 911 operations have deployed NG911. As local/state jurisdictions migrate to NG911 and transition from old legacy equipment, military installations may risk degraded 911 service, unless they coordinate efforts with local/state 911 agencies, or the DoD assumes the cost of operating the old legacy system.

➢ Lack of coordination results in patchwork implementation with limited interoperability

Without a focused effort and adequate funding, NG911 within the DoD largely will be deployed in an uncoordinated and piecemeal manner. Some bases may undertake coordinated efforts, but without direction and guidance, many will not. The result will be a patchwork system with individual base installations having widely varied capabilities and limited interoperability with each other or neighboring local 911 agencies or state systems, compromising the benefits of integrated and interconnected systems of advanced technologies.

> Failure to act in a timely and coordinated manner will cost lives, money, and erode trust.

➢ Lack of coordination results in missed opportunities for improved emergency response on and off the base

The emergence of advanced broadband communications puts much more powerful capabilities and functionality in the hands of military emergency responders. Without NG911, however, base emergency

responders will not be able to receive the enhanced information available through text, video, and data generated by these broadband systems. The result will be an ineffective communications system and less-than-optimal response to emergency calls for help on DoD installations, or as military personnel respond to local requests for mutual aid.

➢ Lack of coordination puts lives and property at risk

Operational procedures and protocols for law enforcement, fire, and emergency medical services (EMS) will need to adapt to the expanded communications capabilities and situational awareness provided by NG911 systems. An uncoordinated, patchwork transition, can mean loss of NG911 features and/or interoperability between emergency communications centers, threatening the effectiveness of response and the lives of emergency responders and those they work to keep safe.

➢ Lack of coordination underserves the population on military installations

The increase in text and multimedia capabilities over the past decade has expanded communication opportunities for all persons. A delayed transition to NG911 leaves the DoD behind in its ability to contact emergency services in ways people normally communicate. The DoD's duty to protect the lives and property of those under their command is compromised.

➢ Lack of coordination undermines trust in the 911 system and creates disparate service levels in the community

A delayed transition will create significant disparities in 911 features, functionality, and service levels between the local communities and their military partners, which will confuse and frustrate consumers, diminishing public trust in NG911 features and the 911 system. The DoD policy to interface DoD systems with public safety networks to share information can prove to be challenging in practice due to disparate systems and other DoD policies regarding information assurance and security concerns. The result will be a lack of confidence in a system the public relies on to ensure their safety, or report crime or damage to life and property, whether they use a base phone or wireless device.

➢ Inaction creates technological obsolescence

The commercial marketplace already has largely completed the technology transition now facing the 911 community, migrating from outdated technologies to the advanced IP-based technologies to drive today's communications services and save costs. As this happens, network providers seek to retire high-maintenance and costly infrastructure as quickly as possible. Continued reliance on obsolete infrastructure will render military 911 systems that have not transitioned obsolete and isolated. The result will be increased costs to states, 911 authorities, and especially the DoD, which will be required to continue to support obsolete systems, resulting in greater risk of service outages and system failures. This puts the DoD behind local services that are progressing more rapidly to NG911.

➢ Inaction increases the costs of operating obsolete DoD 911 systems

During the transition to NG911, state and local public safety agencies will have to pay the implementation and initial operation costs of NG911, while also paying for the continued support of legacy systems. An extended transition period or one in which the DoD does not participate will result in substantially greater costs to state and local government for these dual systems, or decisions to transfer those costs to any entity that continues to use the old legacy system. In addition, funding the NG911 transition as a series of uncoordinated programs will drive cost inefficiencies and increase the overall cost burden on 911 authorities—whether state, local or military.

Department of Defense Instruction

"In accordance with the authority in DoD Directive (DoDD) 5134.01 (Reference (a)), this instruction reissues and renames DoD Instruction (DoDI) 4000.19 (Reference (b)) to establish policy, assign responsibilities, and prescribe procedures for support agreements." The DoD's instruction for support agreements can be found at:
https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/400019p.pdf

Memorandum of Agreement Template

MEMORANDUM OF AGREEMENT
BY AND BETWEEN
<Military Base> Emergency Communications Center

AND

<Local Jurisdiction> County Department of <Name>

This Memorandum of Agreement (hereinafter "Agreement") is made and entered into on [Month Day], **20XX**, by and between **<Base Name> Emergency Communications Center** (**name**) and **<Name> County Department of Public Safety Communications (name).**

WHEREAS, the parties to this Agreement 9-1-1 call taking and dispatch services, and;

WHEREAS, the parties to this Agreement desire to provide contingency and/or overflow support to one another, and;

WHEREAS, the parties desire to formalize their decisions regarding said contingency and/or overflow support;

THEREFORE, Pursuant to [list relevant state and/or local laws], and in consideration of the mutual covenants contained herein, the parties agree as follows:

<Name> County Department of Public Safety Communications and <Military Base Name> Emergency Communications Center mutually agree to accept contingency diverted 9-1-1 calls from each other's PSAP. Contingency diverted 9-1-1 calls may not be supported if the receiving PSAP is experiencing its emergency or has a need for overflow call handling support. The conditions under which a contingency diversion route may occur shall be as follows, but not limited to: the need for PSAP evacuation, network or customer premise equipment failure, no workstation logged on, or other condition.

Condition 1: Call overflow due to busy condition or ring, no-answer
The receiving PSAP will accept overflow calls from the diverting PSAP when its call queue is full, or a call goes unanswered for a period of [sixty (60)] seconds. The receiving PSAP will make best efforts to deliver any answered calls under this provision back to the diverting PSAP's jurisdiction by the following manner and in the following priority order:

1st Priority Method: Radio transmission on **XXXX** PSAP
2nd Priority Method: Teletype

Condition 2: Call diversion due to PSAP evacuation (also known as abandonment)
The receiving PSAP will accept calls from the diverting PSAP when it has invoked its abandonment state in the NG911 Core Services (NGCS) policy routing rules and the receiving PSAP is next in the rules queue. The diverting PSAP may have multiple alternate destinations provisioned ahead of the receiving PSAP which may assist in limiting the volume of calls diverted to its call queue.

The receiving PSAP will make best efforts to deliver any answered calls under this provision back to the diverting PSAP by:

1st Priority Method: Radio transmission on **XXXX** PSAP
2nd Priority Method: Voice transmission to designated cell phone

Both <**county name**> and <**base name**> agree to place an overflow queue for each other on their call handling screens to manage inbound diverted 9-1-1 calls within [180] days of execution of this Agreement. Both parties understand that diverted calls are answered with a lower priority than the answering jurisdiction's [choose from or add to the following: [**9-1-1, text-to-911, 10-digit emergency, 10-digit non-emergency calls, administrative and alarm calls**].

RECORDS MAINTENANCE
Both parties will share call handling and call documentation procedures to inform one another of the specifics of each other's operation. Both parties will make an effort to align with the call documentation procedures when handling calls from the other's jurisdiction.

<Name> County DPSC will follow up radio or voice transmission/teletype with the delivery of a fax to (**xxx)xxx-xxxx** of the Computer-Aided Dispatch (CAD) record for the call to **<Base Name> ECC**.

<Base Name> Emergency Communications will follow up radio or voice transmission/teletype with the delivery of a fax to (**xxx)xxx-xxxx** of the CAD record for the call to **<Name> County <name>**.

AGREEMENT MAINTENANCE
The Parties agree to review this Agreement on an annual basis to update any processes or understandings. The parties entering into this Agreement acknowledge that any modifications to this agreement must be by mutual consent, in writing, and will be treated as an amendment to this Agreement.

TRAINING
Within [60] days of the execution of this Agreement, the Parties agree to conduct and document the appropriate training of their respective staff on these processes and procedures agreed to by the Parties.

NOTIFICATION OF RETURN TO NORMAL CONDITIONS
The Parties agree to notify the other Party of a return to normal conditions (such as the re-occupation of an evacuated PSAP) at the earliest possible opportunity.

COMMITMENT
The Parties agree to provide this support to each other without expectation of financial reimbursement.

TERMINATION.
The terms of this agreement, as modified with the consent of the parties will remain in effect until _____. This Agreement may be terminated by either party with [**XX**] days written notice of withdrawal (or termination) by certified mail with return receipt requested. If withdrawal is due to a conflict between the parties relating to the terms of this Agreement, the Parties shall first attempt to resolve the conflict in accordance with Exhibit X, Dispute Resolution.

IN WITNESS WHEREOF, the parties hereto agree to the terms of the Memorandum of Agreement.

EFFECTIVE DATE. The terms of this Agreement will become effective on the date of the last signature of the Parties.

ASSIGNMENT. Neither <**Name**> County nor <**Military Base Name**> shall assign or transfer any interest or right(s) under this agreement to any person or entity without prior written approval of the other Party.

XXXXX Date	XXXXX Date
<**Military Base**>	<**Name**> County

Approved on behalf of <**Military Base Name**> on_____, by____, **XXXX XXXXX**, <**Title**> and on behalf of <**Local 911 Jurisdiction Name**> on_____, by,_____, **XXXXX XXXXXX**, Chair, <**Name**> **County Board of Supervisors**.

Intergovernmental Support Agreement Template

INTERGOVERNMENTAL SUPPORT AGREEMENT (IGSA) BETWEEN THE UNITED STATES

<MILITARY BASE NAME>

AND

<Local PSAP Name> 911 DISPATCH, <NAME> COUNTY, STATE

FOR

COMPUTER AIDED DISPATCH (CAD)

1. **REFERENCES:**
   a. Department of Defense Instruction (DODI) 4000.19, Support Agreements, 25 April 2013.
   b. IMCOM OPORD 15-012, Intergovernmental Support Agreement Program, 06 November 2014.
   c. NFPA 1221, Installation, Maintenance, and Use of Emergency Services Communications Systems, 2007.
   d. AR 420-90, Fire and Emergency Services, 04 October 2006.
   e. IMCOM CAD-16 Community of Practice Initiative, 2016**.**

2. **BACKGROUND:** This is an Intergovernmental Support Agreement (hereafter referred to as the IGSA) between the United States and the <**Local PSAP Name**> 911 Dispatch, <**Name**> County, State Name (hereafter <**Local PSAP Name**> 911 is used for brevity throughout) entered into pursuant to federal law codified at 10 USC 2679. The statute authorizes the Secretary of the Army to enter into an IGSA on sole-source basis with a state or local government to receive installation support and services. The Secretary of the Army has delegated authority to the Base <Name> to execute agreements on behalf of the United States.

3. **PURPOSE**: The purpose of this IGSA is to outline the roles and responsibilities of the parties, identify the services to be furnished by <**Local PSAP Name**> 911, the prices to be paid by the United States, and the appropriate reimbursement and quality control procedures. The parties undertake this Agreement in order to provide services to the United States and to achieve cost savings for the Department of the Army.

4. **TERMS/ACRONYMS:**

ADR	Alternate Disputes Resolution
CR	Coordination Representative
CAD	Computer Aided Dispatch
GREBS	General Fund Enterprise Business System

GIS	Geographic Information System
IGSA	Intergovernmental Support Agreement
JAS	Jharkhand Administrative Service
JBGC	Joint Base Garrison Commander
MPS	Mission Planning System
POC	Point of Contact
RMO	Resource Management Office
SAM	Support Agreements Manager

5. RESPONSIBILITIES OF THE PARTIES:

<**Local PSAP Name**> 911 (xx911) shall assist in expanding the <Local PSAP Name> 911 public safety Computer Aided Dispatch (CAD) system to <**Military Base Name**> for emergency dispatching services.

<**Local PSAP Name**> 911 will provide the following:

1. Proper licensing and yearly maintenance costs of the CAD system solutions necessary for <**Military Base Name**> to fulfill its mission of providing emergency dispatch services for its public safety needs.
    a. Includes the following:
        i. Six (6) I/Dispatcher licenses
        ii. Necessary capacity of the thirty (30) recurring licenses for the Mobile for Public Safety (MPS) application for mobile field users
2. Properly configure the CAD system to the needs of <**Military Base Name**>
    a. Includes, but not limited to, the following:
        i. Unit IDs
        ii. Incident Type Codes
        iii. Disposition Codes
3. Collaboratively integrate any GIS and mapping needs to ensure proper responses on the <**Military Base Name**> jurisdiction.
    a. Includes, but not limited to, the following:
        i. Street network
        ii. Building and/or address points
        iii. Response planning
4. Collaboratively work with <**Military Base Name**> network engineering staff to establish and configure proper connectivity between the <**Local PSAP Name**> 911 CAD servers and the <**Military Base Name**> Communications Center.
5. Provide training using a Train-the-Trainer method to provide necessary training for <**Military Base Name**> to then train their own personnel back on their operating procedures.

a. Training may be provided and used, upon request, at the <**Local PSAP Name**> 911 Training Lab in <location>**.**

<**Military Base Name**> will provide the following:

1. Have the necessary computer hardware and software to run the CAD system, including I/Dispatcher and MPS.
    a. Specifications on requirements would be provided to <**Military Base Name**> to ensure they have the proper computer hardware and software
2. Provide a point of contact(s) who have the authority to make proper decisions in the configuration of the system for the best interest of <**Military Base Name**> public safety.
3. Provide any critical GIS and mapping information to build a fully integrated map.
4. Provide a group of trainers who would then train others on the CAD system.
5. Provide the necessary secured connectivity and any desired redundancy to ensure the transport of data from <**Local PSAP Name**> 911 to <**Military Base Name**> Communications Center.
    a. Open Communications and Quality Control: The Parties shall identify and present any issues and concerns that could potentially impede successful performance of the IGSA in a timely and professional manner. <**Local PSAP Name**> 911 shall maintain a quality control plan to ensure all services are completed within the specified timelines and quality standards specified in the Agreement. After its execution, an initial joint meeting of the Parties will be conducted to discuss the terms of the IGSA.
    b. Inspection of Services:
        i. <**Local PSAP Name**> 911 will only tender services and goods in conformance with the IGSA.
        ii. The <**Military Base Name**> shall appoint a Government Coordination Representative (CR) who will be responsible for inspecting all services performed. <**Local PSAP Name**> 911 will be notified of the identity of the CR and alternate, and of any changes. If services are performed outside the installation, the CR shall be granted access to areas where services are performed. The CR shall have the right to inspect all services. Inspections are to be conducted in a manner that will not unduly delay the performance of work.
        iii. If the <**Military Base Name**> CR determines that services do not conform to the requirements in Agreement, the CR can reduce the billed price to reflect the reduced value of the services to be performed. The CR may alternately, in his/her sole discretion, waive price reductions. Such waivers shall not constitute a waiver of requirements in the IGSA unless approved in writing by the <**Military Base Name**> Support Agreements Manager (SAM).
        iv. If <**Local PSAP Name**> 911 is unable to perform any of the services due to an occurrence beyond the reasonable control of the parties, such as Acts of God, unusually severe weather, or government activities of the installation which impede the <**Local PSAP Name**> 911's performance, the <**Local PSAP Name**> 911 shall promptly notify the CR.

v. In those rare instances in which the <**Local PSAP Name**> 911 fails to re-perform services or abandons performance, the United Sates may perform or contract the performance of the services and charge those costs to <**Local PSAP Name**> 911. Except in an emergency, the United States will not exercise this authority without providing prior notice to the POC designated by <**Local PSAP Name**> 911 to allow for amicable resolution of issues between the parties. If services are deemed to be deficient and cannot be corrected to the satisfaction of the CR, the SAM may terminate the IGSA immediately. Such termination shall not become effective without prior notice and consultation with the <**Local PSAP Name**> 911 POC identified in this agreement.

vi. The <**Local PSAP Name**> 911 recognizes that the services under this Agreement are vital to the United States and must be continued without interruption and performed even in event of a dispute between the parties.

vii. Except as otherwise provided in this agreement, <**Local PSAP Name**> 911 shall indemnify and hold the United States harmless against any and all judgments, expenses, liabilities, claims and charges of whatever kind or nature that may arise as a result of the activities of <**Local PSAP Name**> 911 or its employees in performance of this agreement.

6. Financial Details:

a. In consideration for the services to be provided by <**Local PSAP Name**> 911, the United States agrees to pay the <**Local PSAP Name**> 911 in accordance with the following amounts:

i. BASE YEAR (startup costs)

1. Licensing for 6 workstations – $xxx,xxx/xx
2. GIS/NETWORK/IT/TRAINING/CAD CONFIGURATION/– $xx,xx.xx
3. PROJECT MANAGEMENT/MANPOWER HOURS/OVERHEAD - $x,xxx.xx
4. TOTAL COST $xxx,xxx.xx

ii. OPTION YEARS

1. Annual Maintenance - $xx,xxx.xx

b. The United States shall pay <**Local PSAP Name**> 911 for services based upon satisfactory completion of services on a monthly basis. Payment shall be based for services provided as set forth in this agreement. <**Local PSAP Name**> 911 shall not include any State or Local taxes in the prices it charges the United Sates unless approved by the Budget Office in advance.

c. <**Local PSAP Name**> 911 shall electronically submit invoices or payment requests to the CR and the Resource Management Office (RMO) Budget Officer. The CR will not authorize payment unless all billed services have been satisfactorily complete, and may reduce the amount(s) billed for unsatisfactory or partial performance, or for other reasons specified in this Agreement.

d. The Government will make payment in accordance with the Prompt Payment Act (31 USC 3903) and implementing regulations. Interest shall be paid for late payments as required by the Act and shall be paid at the rate established by the Secretary of the

Treasury for disputes under the Contract Disputes Act of 1978. Payment will be made by the Budget Officer (or designee) through the General Fund Enterprise Business System (GFEBS). Rates may be adjusted only upon 90 days written notice to the CR. If the CR or his representative disagree, the parties shall discuss the proposed rates, changes in the services, or other modifications to the Agreement. Modifications to prices in the Agreement must be reduced to writing and approved and incorporated into the Agreement by the SAM.

7. General Provisions:

This is a non-personal services agreement. Each party is responsible for all costs of its personnel including pay, benefits, support and travel. Each party is responsible for super vision or management of its personnel.

a. The tasks, duties and responsibilities set forth in this IGSA may not be interpreted or implemented in any manner that results in <**Local PSAP Name**> 911personnel creating or modifying federal policy, obligating appropriated funds of the United States, or oversee ing the work of federal employees.Under no circumstances, shall <**Local PSAP Name**> 911employees or contractors be deemed federal employees. If <**Local PSAP Name**> 911 shall provide services through a contract, the contract must be awarded through competitive procedures. (This requirement does not apply to collective bargaining agreements between <**Local PSAP Name**> 911 and its employees.) Employees of the United States may not perform services for or on behalf of <Local PSAP Name> 911 without the approval of the JBGC.
b. The IGSA is subject to the law and regulations of the United States. If any federal statue expressly prescribes policies or requirements that differ from the terms and conditions of this IGSA, the provisions of the statute shall govern.
c. This Agreement is not transferable except with the written authorization of the SAM.
d. Any act described in the IGSA to be performed by an individual or official can be performed by the designee of such individual or official.

8. Terms of Agreement:

The term of this Agreement shall be for one year from the execution of the Agreement, and renewable for successive one-year periods for four additional years. The United States shall only be obligated for only one year of performance under the agreement, as it has no authority to obligate additional periods of performance without an appropriation of adequate funds by the Congress.

a. The United States shall be obligated only for an additional year of performance upon receipt of such funds, and only upon written notice by the Agreement Officer of an intent to award the option for an additional year of performance. The SAM shall provide notice of the renewal of the IGSA at least thirty days prior to the expiration of the current performance period. The Budget Officer may condition the renewal upon availability of funds, and may suspend performance of the renewed period at no additional cost to the United States, until adequate funds have been received. If, funds are not received, the parties agree that the

Agreement can be unilaterally terminated by the SAM without further liability to the United States.

b. The IGSA may be terminated by mutual written agreement at any time. Except as otherwise specified in this agreement, either party can unilaterally terminate this IGSA upon 180 days written notice to the POCs designated in this Agreement.

c. The United States reserves the right to terminate this agreement for its convenience at any time. When notified by the Agreements Officer of the termination, <**Local PSAP Name**> 911 shall immediately stop all work. The Government will pay <**Local PSAP Name**> 911 a percentage of the agreed price reflecting the percentage of work performed prior to the notice. <**Local PSAP Name**> 911 shall not be paid for any work performed or costs incurred which reasonably could have been avoided.

d. The United States reserves the right to suspend performance of the agreement or access to the installation in event of emergencies, mobilizations, national security reasons, or for other reasons outside the control of the United States.

9. Claims and Disputes:

The parties shall use their best efforts to resolve any disagreement or disputes they may have regarding this Agreement. To minimize disputes, the parties will meet periodically, preferably on a monthly basis, to discuss performance and any other issues they may have. The CR shall represent the Government in such meetings.

a. If the parties are unable to resolve an issue, the CR or <**Local PSAP Name**>911 may submit a claim arising out of the Agreement to the JBGC for a final decision. The written submission must specify the nature and basis for the relief requested and include all data that supports the claim, and may designate a <**Local PSAP Name**> 911 representative to discuss the claim and its resolution. The JBGC shall issue a final decision within 90 days of receipt of each claim. The parties agree to the above procedures in lieu of litigation in any forum.

b. If <**Local PSAP Name**>911 is dissatisfied with the JBGC's decision, it may request alternate disputes resolution (ADR) to resolve disputes; the Government may agree to the use of ADR in its sole discretion. If ADR procedures are employed, the JBGC shall consider the findings and recommendations of the third-party mediator(s) in making his final determination.

c. The parties agree to the above procedures in lieu of litigation in any forum.

10. Points of Contact:

The following points of contact will be used by the parties to communicate in the implementation of this IGSA. Each party may change its point of contact upon reasonable notice to the other party.

a. For the United States, the CR and the SAM

_____ **<Name>**

_____ **<Title>**

_____ **<Telephone>**

_____ **<Email>**

b. For **<Local PSAP Name>** 911:

_____ **<Name>**

_____ **<Title>**

_____ **<Telephone>**

_____ **<Email>**

c. **Annual Review:**

Unless otherwise specified, all notices under this Agreement shall be provided to the POCs specified above. The CR official and a JAS management official shall annually review the IGSA, and consider any amendments to the Agreement.

d. **Amendments:**

Any party can propose amendments at any time. All amendments must be reduced to writing and incorporated by amendment to the Agreement by the Agreements Officer in order to be effective.

11. Signature and Approval:

For <Local PSAP Name> 911	**For <Military Base Name>**
_____	_____
Executive Director	**<Title>**
<Local PSAP Name> 911	**Commanding**

Confidentiality Agreement (aka Non-Disclosure Agreement) Template

Confidentiality Agreement

Confidentiality Statement

I understand that the Emergency Services IP Network (ESInet) is intended for use by _____ County (COUNTY), its employees, agents, and subcontractors, including Public Safety Answering Points (PSAP), to connect 911 customers to the COUNTY, to provide 911 services.

I understand that in the course of my employment or contractual relationship with COUNTY, I may receive or become aware of confidential DATA. "DATA" for the purposes of this Agreement shall mean:

- any written information,
- documents, or
- electronic data,

relating to the ESInet that is marked "Confidential" or "Proprietary", including the telecommunication interconnections between the VENDOR, the ESInet, the STATE, the COUNTY, or its PSAPs."

The DATA may include confidential or proprietary information belonging to the COUNTY, its PSAPs, the STATE, and/or VENDOR or confidential security data that could result in a security risk to the ESInet. "VENDOR" for the purposes of this Agreement means _____. "STATE" for the purposes of this Agreement means the _____, and agency of the State of _____.

I understand that I am prohibited from any use of the DATA other than to facilitate telecommunication interconnections between the VENDOR, the ESInet, the STATE, the COUNTY or its PSAPs related to the ESInet. Any other use of the DATA is prohibited.

I understand that I shall maintain the confidentiality of all information provided by the COUNTY or acquired in performance of this Agreement, except upon the prior written consent of the County Legal Counsel or an order entered by a court after having acquired jurisdiction over the COUNTY. I shall immediately give to the COUNTY notice of any judicial proceeding seeking disclosure of such information. I shall indemnify and hold harmless the COUNTY, its officials, agents or employees from all loss or expense, including, but not limited to settlements, judgments, setoffs, attorneys' fees and costs resulting from my breach of this provision

I certify that I will not disclose any DATA unless specifically authorized by the STATE, the COUNTY, or as provided in this Agreement.

Signature

Date

Printed Name and Title

Organization

APPENDIX K – NENA RECOMMENDED BEST PRACTICES RELATED TO SLAS

An SLA is a mutually agreed-upon formal document negotiated between the 911 entity and the vendor that defines the service level commitment the vendor agrees to provide. An example of what might be considered in an SLA is the ability to sustain active calls within the system. An event may cause a failure of one half of a redundant system that may terminate all services (and active calls) on that system, but the second half of the system is available immediately for new services (i.e., new calls) to be created. This maintains the required network availability, yet all live services had been dropped. Assurance of availability needs to be addressed in an appropriate SLA including maintaining calls that are in progress.

The following text is taken from NENA's *Emergency Services IP Network Design (ESIND) Information Document*[42]

ESInets *[NG911 networks]* are complex and may involve management of SLAs from a number of different vendor/service providers. NENA best practices include:

- Where multiple service providers are involved, there should be a demarcation point that defines the boundaries of responsibilities as described in an agreement.
- Obtain or establish an SLA for the network service. To maintain reliable service and ensure efficient testing, benchmarks should be established, documented, and periodically reviewed for accuracy.
- Contracted levels of service should be established to ensure adequate response times for repair.
- To minimize downtime, critical hot spares should be identified, purchased, and maintained on site.
- Maintenance should include regularly scheduled audits of hardware revision levels and code compatibility (including firmware) with hardware revisions.
- Redundant systems should be regularly exercised by deliberate fail-over as part of routine maintenance.
- Escalation methods should be documented and known to the 911 entity so that responses to failures can be adequately addressed.
- An OLA should be established to define the responsibilities of each vendor and relationships that correlate SLAs for all contributing vendors, including how issues need to be addressed.

[42] NENA-INF-016.2-2018, *Emergency Services IP Network Design (ESIND) Information Document,* April 5, 2018. https://www.nena.org/page/IP_Network_NG911

SLAs should be reviewed on a regular basis for modifications related to the introduction of new technologies, network modifications, or other changes that may permit agreeing to a higher standard for reliability.

APPENDIX L – IMPLEMENTATION CONSIDERATIONS

There are several steps that Pierce County, JBLM, and the Washington State 911 Program followed that may benefit implementations in other regions.

Determine Demarcation Point

The outcome of a site survey will help to identify where the 911 system service provider and/or their subcontractor(s) is going to provide the "drop" or connection point. In an NG911 environment, the originating network only has visibility into the demarcation points at the boundaries of the Emergency Services network through which it is interconnected, but not directly into the PSAP. In Washington, the back room of the PSAP is where the statewide system demarcation point is located. These points of interconnection should be identified, marked, and become part of the system diagrams. Military security requirements will be specific about how much visibility into their network is permitted. Civil entities will not have access to the DoD network but will be interconnected via approved gateway points.

CSRIC VI's Final Report of March 8, 2019[43] includes information and background related to demarcation points between network providers that explain responsibility for managing and reporting failures. It is an excellent resource that describes all the possible demarcation points that can be part of an NG911 network and who should be responsible. The reader is encouraged to consult this document referenced below. Access to the DoD NG911 network (ESInet) will be through various mission partner gateways or peering points. The information flow will then move through the Joint Regional Security Stacks before being released to a civilian PSAP or in-bound before it reaches a DoD PSAP.

See also *NENA Potential Points of Demarcation in NG9-1-1 Networks Information Document*.[44]

Bandwidth Requirements

The bandwidth requirements, whether at the local 911 jurisdiction or the military PSAP, need to align with the current staffing model and current agency needs to support those. As a point of reference, in general, 1.5 megabits per second (Mbps) bandwidth can support up to eight trunks in a legacy environment. Determining bandwidth requirements is recommended during the site survey process and understanding what you physically have today for voice paths will be necessary to determine similar service levels in NG911. In addition, while planning network capacity, determination about expansion for future requirements for video and other multimedia applications should be given forethought. Considerations should include the number of workstations, CHE concurrent session capabilities, call

[43] *Final Report – Recommendations for 9-1-1 System Reliability and Resiliency during the NG9-1-1 Transition,* Version 2.0 – March 8, 2019 (Addition of Best Practices). CSRIC.
https://www.fcc.gov/files/csric6wg1finalreport030819pdf
[44] https://www.nena.org/page/NG911_Demarcation

volume, and local bandwidth availability. Plans for service needs or expansion due to technological or population growth also should be considered.

Redundancy and Diversity Design

Consider the need for reliability for both the military network interfaces and the state/local network, and should ensure the network design discussions address reliability and diversity along with who pays for additional redundancy and diversity that might be necessary, required, or desired.

Determine what calls will be routed directly to which PSAP, such as from a base PBX, and what calls are to go through the public switched telephone network (PSTN)/NG911 network and be sent to the DoD PSAP. It will be necessary to define who pays for what elements and understand what has been contracted for by the state or local 911 jurisdiction already.

These decision points should be captured in the MOA/MOU.

Interface Specifications

NENA defines the processes and interface specifications for NG911 but there is latitude for the various commercial vendors to be uniquely specific. Typically, the NG911 system service provider will be required to provide its. The entities will need to request the interface specifications if they are not provided and both local 911 jurisdictions and the military 911 entity need to request it, if not provided as part of the state contract. Neither party will be able to move forward without these specifications called out in the MOA/MOU.

Other Interfaces

Other interfaces, which must also be detailed in the MOA/MOU, that may be required, such as CAD systems, CHE, centralized data storage, or others will need to be considered in the technology design. Playbook participants caution that the NG911 system service provider and the military authority need to be part of the collaboration for this step to make it all work together.

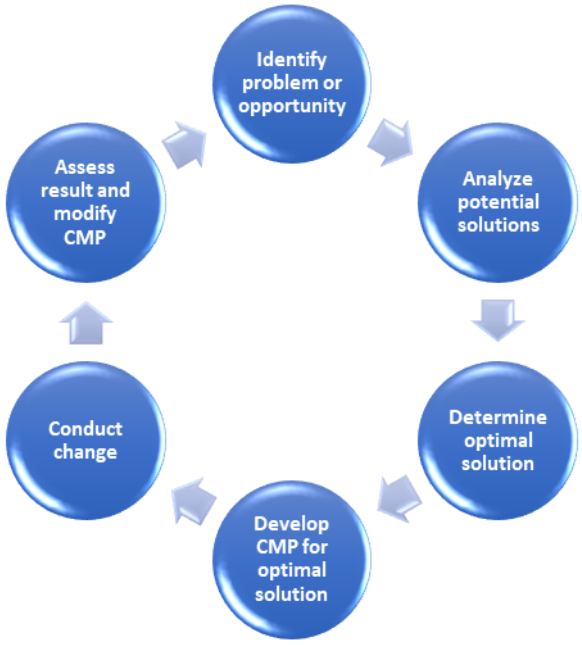
Similar steps are necessary at the local jurisdictional level and authorities are encouraged to engage their system provider early in the process and find out if they have tools or configuration information they need to follow.

In Washington, the NG911 system service provider placed orders to get the connectivity on JBLM. Getting to the agreed-upon demarcation is one thing but getting from the demarcation point to the physical PSAP location may present another challenge. At JBLM, this required NETCOM's participation to continue the connectivity across government-owned facilities.

APPENDIX M – CHANGE MANAGEMENT PROCESS

Change is inevitable and the networks and systems used in the processing of emergency calls for service are no exception. To effectively prepare for changes that are expected in an NG911 system, a comprehensive CMP should be developed. "The goal of the CMP is to ensure that standardized methods and procedures are used for efficient and prompt handling of all changes, in order to minimize the impact of change-related incidents on service quality, and consequently improve the day-to-day operations of the organization."[45]

Transitioning to new technology is a significant activity that requires careful planning, organization, and execution. Even with significant planning, changes may be required throughout the transition and after the transition is complete. Given how the migration to NG911 and fluctuating methodology for implementation is occurring, developing a well-documented CMP will be critical to avoid service disruption or even unforeseen effects on other systems or operations. A defined change process should be designed to not only address internal operations but also to provide review and authorization to proceed with changes proposed by system vendors.



The CMP should include a formal workflow process—in which a review of planned procedures is evaluated at multiple levels, both internal and external to the organization—documented MOPs and approvals, and communication plans. Once developed, both internal and external parties must be held accountable for compliance with the process.

There are generally three major categories of changes that occur:

- Internally initiated change for technical or operational effectiveness

[45] https://en.wikipedia.org/wiki/Change_management_(ITSM)

- Vendor-initiated system change; usually technological but may also include procedures of the vendor or solutions provider
- Urgent/emergency change that is unanticipated

A process flow matrix that offers a high-level view of the change process the agency may experience during NG911 transition and operation of the NG911 system follows. Collaboration among the entities (state, local jurisdictional authority, and vendor[s]) to create the appropriate change requests and to complete any documentation of changes is essential.

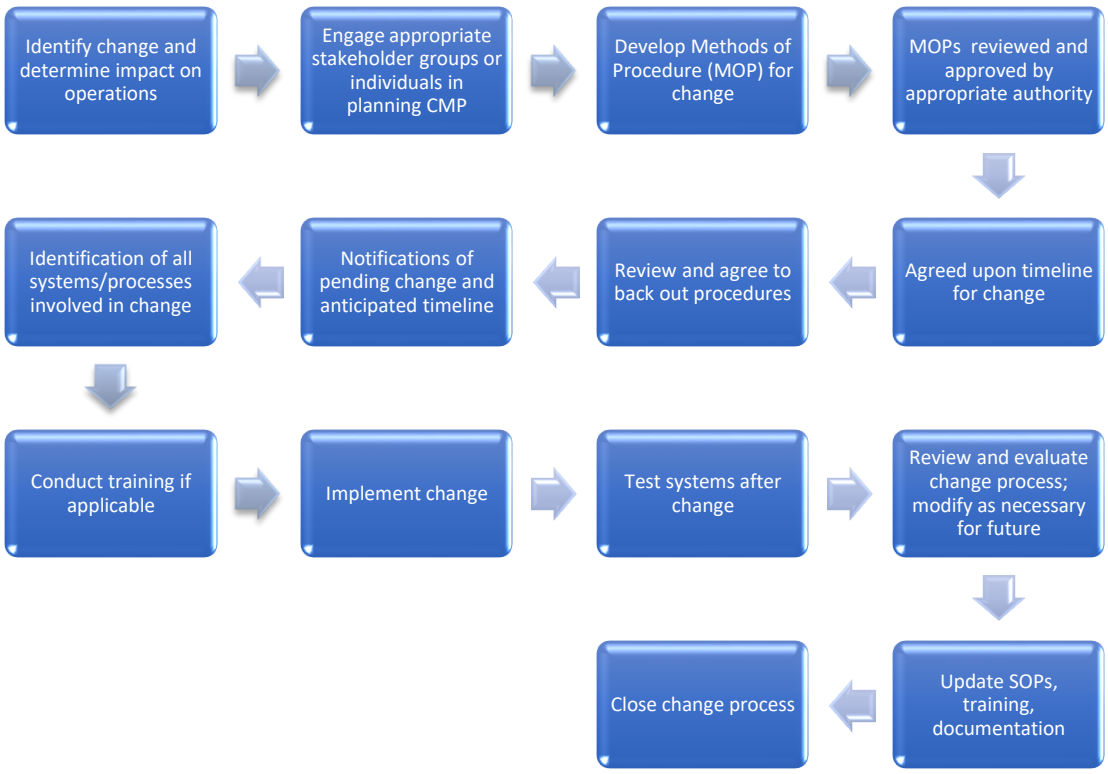


Figure 3: Detailed Changed Management Process Flow

Effective change management contains multiple perspectives. For the NG911 transition, the initial focus is on the NG911 transition itself and the creation of the infrastructure to support the PSAPs. For the PSAPs, the change management process becomes an essential management function that PSAPs should rely on to ensure the continuation of missions and goals.

The following tables illustrate a high-level process flow during a typical change management process in the three primary areas where change generally occurs.

Internally Initiated Change

An agency-initiated change is required because of needed operational improvements, efficiencies, response protocol changes, or anticipated external events such as a man-made or natural disaster that alters the agency's ability to conduct normal operations. Agencies are encouraged to establish a CMP committee or group that involves appropriate affected stakeholders to collaborate on how to mitigate the adverse impact on various aspects of the agency's responsibilities.

Consider an agency-proposed CMP that includes the following:
Documented CMP that includes how change will be managed.
Notification process and procedure to alert appropriate stakeholders of the change(s), such as a formal request process, if it is a technical change to the vendor and solution provider.
For non-emergency changes, either technical or operational, the agency should determine a minimum number of days' notice required to inform and instruct stakeholders.
Documentation on any operational changes to include training notes, feature/functionality changes/improvements, operational impacts or changes to internal processes, etc. Documentation for technical change requests will be managed by the vendor/solutions provider but should be required.
An internal MOP to be reviewed by multiple agency authorities (training coordinator, supervision, internal IT staff, legal, continuity of operations manager, operational staff) and an anticipated implementation timeline the agency requires or expects before planned changes.
Means for the agency to monitor changes and receive updates on the progress of those changes.
Defined and documented backup and restoration procedures should the change not be acceptable.

Vendor-initiated Change

Change management expectations and requirements should be clearly defined and included in any request for proposal (RFP) and contract for NG911 service. At the very least, it is strongly suggested that the agency consider adding language that all MOPs for change deployment should include:

- Back-out procedures and return of the system to its pre-change state, if the change proves to be disadvantageous, tests fail, or systems do not perform as anticipated
- A communications plan (sometimes known as a crisis communication plan) for notifying the public of alternate ways to contact 911 if the change results in degradation of service or service disruption

Consider ensuring that a vendor's CMP includes the following:
Documented CMP that includes how change will be managed when that change is scheduled and under urgent/emergency situations.
Notification process and procedure to alert stakeholders of scheduled and emergency changes.
For non-emergency changes, the agency should propose a minimum number of days' notice it requires.
Complete documentation on any upgrades or updates to include release notes, feature/functionality changes/improvements, bug fixes, etc.
An MOP made available for review by the agency and the number of notification days the agency requires before planned maintenance activities.
Means for the agency to request changes and receive updates on the progress of those changes.
Documented COOP plan for the provider of the NG911 solution and network operations center (NOC) outages.
Defined and documented system backup and restoration procedures are approved and in place.

The recommendations above suggest that the state or local 911 agency includes in their service contract some SLAs regarding advance notice of scheduled changes, right of state/agency to dictate scheduling and acceptance/rejection of manufacturer-initiated changes, go-no-go decision criteria, frequency of manufacturer-required changes, and possible penalties for change implementations that cause unexpected and unforeseen service-impacting issues. This may be difficult in a multi-tenant hosted or cloud-based solution, but it should be discussed and agreed upon in advance of any contract signing.

Urgent/Emergency Change

Emergency or urgent change requests are those that fit neither of the criteria above and are unforeseen and unplanned. These urgent scenarios may be either technical or operational.

Many of the principles listed above for internally initiated or vendor-initiated change apply to the urgent situation as well. Agencies are encouraged to consider them when planning for a CMP under urgent or emergency situations, especially:

- Restoration procedures and the ability to return the system(s) to its pre-change state, if the change proves to be disadvantageous, tests fail, or systems do not perform as anticipated
- A communications plan (crisis communication plan) for notifying the public of alternate ways to contact 911 if the change results in degradation of service or service disruption

Consider ensuring that any urgent or emergency CMP includes the following:
Documented CMP that includes how change will be managed when that change is requested or required under urgent/emergency (unplanned) situations. Agencies and their vendors are encouraged to conduct exercises or simulations of the CMP periodically. This exercising will help to keep those involved trained so that when an urgent situation is presented all responsible parties are aware of the processes to follow.
An urgent notification process of the emergency changes. Agencies and their vendors are encouraged to carry out trial or table-top tests or exercises of the notification process periodically. This testing helps to educate and inform those involved so that when an urgent situation presents itself all responsible parties are aware of the processes.
After-action documentation on any upgrades or updates to technology or operations to include notes, changes to configuration documentation, feature/functionality changes/ improvements, bug fixes, etc.
Commitment to an after-action review and evaluation of the emergency change process.
Commitment by the vendor and solution provider (if applicable) to periodic update notifications on the progress of the change during the change process.
Defined and documented system backup and restoration procedures.
Method to inform the public if any service-impacting conditions are present.

Due to the nature of urgent changes, capturing documentation after the fact, or after the event causing the change has passed may be necessary.

Change management is a fundamental principle of functional and effective management. Too often, public safety has left the change process to the discretion of the vendor, with little input over the process from the client agency. However, states or 911 authorities are encouraged to incent their service provider(s) to understand their strong desire to not only be part of the change process but that the needs of the 911 operation drive the process and that all parties must be committed to following a documented, vetted procedure.

APPENDIX N – ROUTING PLANS

When events prevent normal call routing from occurring, the last thing the PSAP needs is confusion on what to do. The PSAPs, military and civilian, would be well served to establish practices and procedures for dealing with such circumstances before the event presents itself. These guidelines provide an overview of operational, technical, and governance specifications and requirements related to alternate and abandonment routing of 911 calls with the intent to help the PSAP in the development of standard routing arrangements during conditions of abandonment of the PSAP or needing an alternate means of completing a 911 call. When all PSAP networks are fully NENA i3-capable, this problem will be solved. Until then, it needs to be addressed.

It must be possible for any given 911 authority to decide where its calls should be routed and make changes to its routing policy dynamically. In legacy and transitional environments, a PSAP may have a backup ingress network for receiving calls. In this case, the PSAP should develop a comprehensive plan to switch to the backup network as part of a periodic process for testing a COOP plan.

Routing plans should be defined and included in SOPs, training programs, COOP plans, and MOAs/MOUs as appropriate. They should be exercised and tested periodically to ensure they function as designed.

- **Abandonment Routing** – 911 abandonment routing is activated when PSAP functionality is disabled and no longer able to receive calls (e.g., a building fire, water damage, or weather-related event that renders the PSAP uninhabitable). A predetermined routing path should be defined and, once activated, will route 911 calls to the designated new location.

- **Overflow/Alternate Routing** – Overflow or alternate routing is the capability of routing 911 calls to a designated alternate location(s) if all 911 trunks/circuits/paths are busy or out of service. This functionality may be activated upon request or automatically, if technically detectable, when 911 equipment fails or has no more available incoming paths for call completion. Parties should discuss options with their service provider and define and document 911 call flows in the event of circuit busy or out-of-service conditions.

Carriers, enterprises, and other entities that route emergency calls must be able to route calls to the appropriate Emergency Services Network based on available location information.

It may be that a higher-level civic authority such as a county or state/province is responsible for making common routing decisions for all PSAPs within its jurisdiction. For example, a state may wish to have all emergency calls placed within that state directed to a specific PSAP not impacted by the circumstance (such as a flood, tornado, etc.).

Alternative routing plans, such as those noted above, are often included in MOAs/MOUs between PSAP jurisdictions and are considered necessary to ensure understanding of the conditions the parties agree

to when activating alternate routing schemes. The National Capital Region provided a sample MOU as a functional example that outlines necessary guidelines and processes.

Agencies are urged to remember communication- and access-challenged populations in their network and routing policies to ensure that segment of the calling public is properly supported during the transition and under conditions of a service outage.

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Next Generation 9-1-1 (NG9-1-1)
Call Logistics Procedures
Memorandum of Understanding (MOU)

The [INSERT PARTY A's Board/Commission/Authority HERE] of [INSERT PARTY A's NAME HERE] and the [INSERT PARTY B's Board/Commission/Authority HERE] of [INSERT PARTY B's NAME HERE] have entered into this Memorandum of Understanding (MOU) pursuant to which a framework is established between **[INSERT PARTY A's NAME HERE] ([INSERT PARTY A's ACRONYM HERE])** and **[INSERT PARTY B's NAME HERE] ([INSERT PARTY B's ACRONYM HERE])** (hereinafter the "Parties") to handle exigent circumstances with Next Generation 9-1-1 (NG9-1-1) proficiencies for expedient call transfer capabilities to meet the needs of public safety.

This MOU authorizes and directs the [INSERT PARTY A's AUTHORITY TITLE HERE] of [INSERT PARTY A's NAME HERE] and the [INSERT PARTY B's AUTHORITY TITLE HERE] of [INSERT PARTY B's NAME HERE] to enter into a separate Next Generation 9-1-1 Call Logistics Procedures Memorandum of Understanding (hereinafter referred to as "NG9-1-1 Call Logistics Procedures Memorandum" or "MOU") to establish the procedures that enable alternate and abandonment routing of emergency calls during exigent circumstances.

This NG9-1-1 Call Logistics Procedures Memorandum establishes the procedures to be followed during such circumstances.

The headings contained in this MOU are for convenience of reference only and shall not affect in any way the meaning or interpretation of this MOU. As the 9-1-1 centric name for dispatch centers, Public Safety Answering Point (PSAP) will be used to describe the centers that answer 9-1-1 calls; likewise, an Emergency Communications Center (ECC) answers 9-1-1 calls or dispatches them, or both. PSAP and ECC is used interchangeably throughout this MOU.

I. ADDITIONAL DEFINITIONS

Abandoned Call – A call placed to 9-1-1 when an ECC is in an abandonment state/offline.

Contingency Diversion – The capability of routing 9-1-1 calls to a designated alternate location(s) if all 9-1-1 trunks are busy or out of service due to a service interruption. May be activated upon request or automatically, if detectable, when call volume exceeds a designated threshold, 9-1-1 equipment fails, the PSAP itself is disabled, or other condition causes the processing and answering of a 9-1-1 call to be compromised.

Diverting PSAP (NENA) – The PSAP which, by agreement, reroutes 9-1-1 calls to an alternate PSAP/ECC under exigent circumstances.

Exigent Circumstances – Situation impacting 9-1-1 call processing, which the PSAP/ECC authority determines is sufficiently significant and pressing to divert calls from the PSAP/ECC to a predetermined alternate PSAP/ECC.

Prolonged Event – An exigent circumstance of a lengthy duration and condition that causes the PSAP/ECC's authority to invoke contingency diversion of 9-1-1 calls from one PSAP/ECC to a predetermined receiving PSAP/ECC.

Receiving PSAP – The PSAP which, by agreement, answers 9-1-1 calls for another PSAP/ECC under exigent circumstances.

II. PROCEDURES AND PROTOCOLS

It is agreed by [INSERT PARTY A's ACRONYM HERE] and [INSERT PARTY B's ACRONYM HERE] that contingency diversion of 9-1-1 calls may not be supported if the receiving PSAP/ECC is experiencing its own emergency or has its own need for overflow call-handling support.

The exigent circumstances and conditions under which a contingency diversion activation may occur shall include, but are not limited to: the need for PSAP/ECC evacuation, network failure, call-handling equipment failure, unavailability of numerous workstations, or other conditions causing the processing and answering of a 9-1-1 call to be compromised.

[INSERT PARTY A's ACRONYM HERE] agrees to accept the following call types from [INSERT PARTY B's ACRONYM HERE]:

- ☐ 9-1-1 Voice
- ☐ 9-1-1 Text
- ☐ 10-digit Emergency
- ☐ 10-digit Non-emergency/Administrative (admin)
- ☐ Alarms
- ☐ Images/Video to 9-1-1

[INSERT PARTY B's ACRONYM HERE] agrees to accept the following call types from [INSERT PARTY A's ACRONYM HERE]:

- ☐ 9-1-1 Voice
- ☐ 9-1-1 Text
- ☐ 10-digit Emergency
- ☐ 10-digit Non-emergency/Administrative (admin)
- ☐ Alarms
- ☐ Images/Video to 9-1-1

A. Condition 1: Call overflow due to instances such as PSAP/ECC busy condition or ring, no-answer due to full call queue.
   i. The receiving PSAP/ECC will accept overflow calls from the diverting PSAP when its call queue is full, or a call goes unanswered for a period of [INSERT NUMBER IN

WORDS HERE] ([INSERT NUMERIC VALUE HERE]) seconds. The receiving PSAP/ECC will make best efforts to deliver any answered call details under this provision back to the diverting PSAP's jurisdiction for dispatch by the following manner and in the following priority order:

a) 1st Priority Method: Radio transmission on [INSERT NUMBER HERE] PSAP/ECC

b) 2nd Priority Method: Teletype (TTY)

c) 3rd Priority Method: 10-digit Non-emergency/Administrative line

B. Condition 2: Call diversion due to instances such as PSAP/ECC offline or evacuated (also known as abandonment) or call-handling equipment is offline due to network outage.

i. The receiving PSAP/ECC will accept calls from the diverting PSAP when the diverting PSAP has invoked its abandonment state in the NG9-1-1 Core Services (NGCS) policy routing rules and the receiving PSAP/ECC is next in the rules queue. The diverting PSAP may have multiple alternate destinations provisioned ahead of the receiving PSAP, which may assist in limiting the volume of calls diverted to its call queue. The receiving PSAP/ECC will make best efforts to deliver any answered call details under this provision back to the diverting PSAP/ECC for dispatch by:

a) 1st Priority Method: Radio transmission on [INSERT NUMBER HERE] PSAP/ECC

b) 2nd Priority Method: Voice transmission to designated cell phone

c) 3rd Priority Method: 10-digit Non-emergency/Administrative line

C. Both [INSERT PARTY A's ACRONYM HERE] and [INSERT PARTY B's ACRONYM HERE] agree to place an overflow queue for each other on their call handling screens to manage inbound diverted 9-1-1 calls within [INSERT NUMBER IN WORDS HERE] ([INSERT NUMERIC VALUE HERE]) days of execution of this MOU. Each Party shall bear their own costs for equipment modification. Both Parties understand that diverted calls may be answered with a lower priority than the answering jurisdiction's [INSERT AND/OR REMOVE CALL TYPES 9-1-1, text-to-9-1-1, 10-digit emergency, 10-digit non-emergency/administrative and alarm calls HERE].

D. During a call diversion event, the receiving PSAP will audio-record answered calls from the diverting PSAP/ECC. Recordings will be made available to the diverting PSAP/ECC upon request.

E. During an emergent, event lasting longer than [INSERT NUMBER IN WORDS HERE] ([INSERT NUMERIC VALUE HERE]) continuing hours, the diverting Party will, in good faith, make best efforts to send staff to the receiving PSAP/ECC to provide operational support and subject-matter expertise to minimize impact to the receiving PSAP/ECC staff and operations.

F. Parties will share their call-handling and call-documentation procedures to inform one

another of the specifics of each other's operation. At a minimum, Parties will gather location information, call back number, nature of the call, and known safety information. Parties will make a concerted effort to align with call-documentation procedures when handling calls from the other's jurisdiction.

G. If a valid callback number is available, Parties will attempt to re-establish contact with abandoned calls. At a minimum, one callback should be performed to verify if an emergency exists when there are signs of distress, inaudibility, or a clear indication that emergency service is needed.

H. When feasibly possible, [INSERT PARTY A's ACRONYM HERE] will follow up with a radio, voice transmission, or TTY with the delivery of a fax to (xxx) xxx-xxxx of the available computer-aided dispatch (CAD) record for [INSERT PARTY B's ACRONYM HERE] calls.

I. When feasibly possible, [INSERT PARTY B's ACRONYM HERE] will follow up with a radio or voice transmission, or TTY with the delivery of a fax to (xxx) xxx-xxxx of the available CAD record for [INSERT PARTY A's ACRONYM HERE] calls.

J. Within [INSERT NUMBER IN WORDS HERE] ([INSERT NUMERIC VALUE HERE]) days of the execution of this MOU, the Parties agree to conduct and document the appropriate training of their respective staff on the processes and procedures agreed to by the Parties.

K. The Parties agree to notify the other Party of a return to normal conditions (such as the re-occupation of an evacuated PSAP) at the earliest possible opportunity. The diverting PSAP/ECC will be responsible for returning services back to normal conditions.

L. If [INSERT PARTY A's ACRONYM HERE] or [INSERT PARTY B's ACRONYM HERE] is compelled by Law to disclose any call information, it shall provide prompt written notice to the other Party. If the Parties cannot fail to quash the legal process requiring disclosure, both Parties understand the requested call information will be disclosed only to the extent necessary to satisfy the request.

III. UPDATES AND MODIFICATIONS TO THIS MOU

The Parties agree to review this NG9-1-1 Call Logistics Procedures Memorandum on bi-annually, at a minimum, to update any processes or understandings.

The Parties entering this NG9-1-1 Call Logistics Procedures Memorandum acknowledge that any modifications must be by mutual consent, in writing, with as much advanced notice as possible considering the circumstances, and will be treated as an amendment to this MOU.

IV. COSTS

After [INSERT NUMBER IN WORDS HERE] ([INSERT NUMERIC VALUE HERE]) continuing hours of a call diversion event, the Parties shall seek to resolve any costs associated with the effect of the call diversion volume, first, by negotiating promptly with each other in good faith. If the Parties are unable to resolve the dispute within [INSERT NUMBER IN WORDS HERE] ([INSERT NUMERIC VALUE HERE]) business days (or such period as the parties shall otherwise agree) through these negotiations, then any such dispute shall be resolved according to the receiving Party's governing law.

V. EFFECTIVE DATES

This NG9-1-1 Call Logistics Procedures Memorandum shall take effect upon its signing by authorized representatives of each party.

Signatures:

[INSERT PARTY A's NAME HERE]

_____Date: _____

By: _____

Title: _____

[INSERT PARTY B's NAME HERE]

_____

Date:_____

By: _____

Title: _____

APPENDIX O – CRISIS COMMUNICATIONS PLANS

An outage reporting process or CCP that is used by the state or local 911 jurisdiction is a useful tool to be followed when a service disruption impacts large portions of the served population. The CCP will always be activated as part of a COOP plan, but a COOP plan may or may not be activated when the CCP is utilized.

A formalized CCP or a service outage reporting policy for the local jurisdiction or state must include military partners if they are integrated into the jurisdiction's network just as any other PSAP. The CCP should outline the processes to be followed in the event of a system failure when the public/military installation needs to be notified to use alternate means to communicate with emergency services and/or request assistance to reach the local PSAP. As part of the statewide or local 911 jurisdictional network, the federal military PSAP can assist in notifying its population.

You are not alone…

Civilian PSAPs may have the ability to support and provide excellent tools and pre-formatted resources to assist military counterparts in developing COOPs for their 911 PSAPs and communication systems.

William Leneweaver, Deputy State 911 Coordinator State of Washington Enhanced 911 Program

Plan Considerations

Communications and message strategy, stakeholder audience (both internal and external), preferred and prioritized communication methods, along with a distribution strategy and distribution channels are all considerations that are part of preparing a functional communications plan. Agencies may wish to develop a set of standard, or canned, messages for a variety of crisis scenarios to accompany the plan. This pre-planning would provide a message template where details and information can be added and adjusted based on the situation—helping to expedite the message development process. Typical components of a strong CCP include:

- **Strategic Communication Principles** – Core principles to guide how the agency will engage internal and external audiences to communicate in a timely, transparent, and proactive manner.
- **Communication Strategies** – Communication policies that are open, responsive, end-goal oriented, clear, and easy to find.
- **Identified Audiences** – Communication strategies may vary depending on the audience. Identify the variety of audiences up and down the chain of communication. Decision-makers, elected officials, or policymakers; staff; stakeholders; and federal, state, or client partners.
- **Communication Channels** – Seek a variety of communications methods to raise awareness and provide succinct information designed to inform and educate. This might include strategies to

use video messaging, digital multimedia, social media, recorded messaging, public service announcements (PSAs), web resources, or news media channels.

Crisis Severity Levels

When outlining scenarios in which the CCP is implemented, agencies should consider assigning severity levels to each scenario. Identifying the severity of a crisis, in advance, based on type, can help guide response during plan activation.

Plan Uniformity

When developing a CCP, agencies should consider how that plan will work in conjunction with existing plans, including COOP and disaster recovery (DR) plans. For example, ensure the CCP can be used outside of the activation of a COOP or DR plan, which may not be activated depending on the situation.

Agencies should strive for uniformity among these plans and all teams should understand how the plans work together, as well as individually.

APPENDIX P – CONTINUITY OF OPERATIONS PLAN

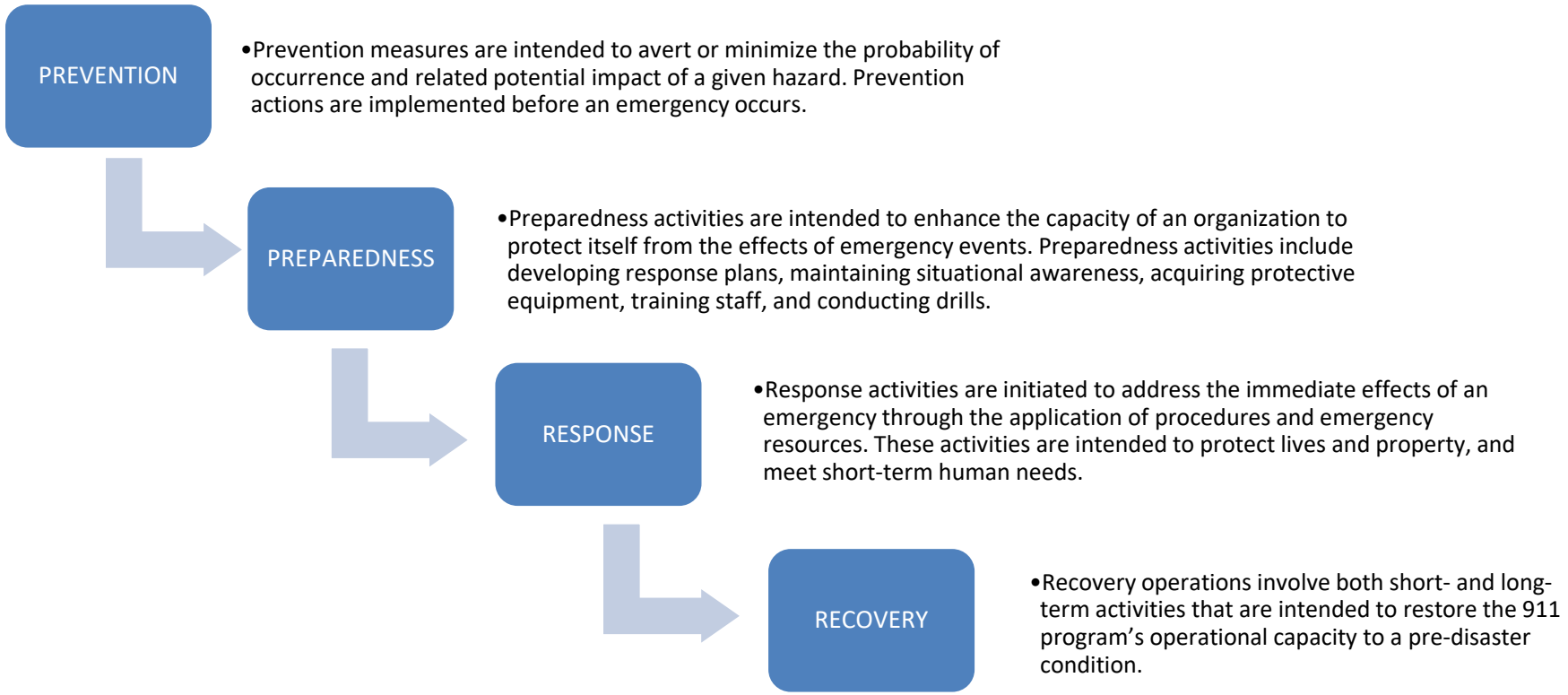
The purpose of a COOP plan is to establish a planned and determined strategy to assure the resilience and operational capacity of the 911 system during situations in which the system is compromised. The COOP plan should encompass all phases of mission continuity management including prevention, preparedness, response, and recovery. The COOP plan will outline the steps necessary for 911 to maintain operational capacity during a localized or region-wide disruption of normal operations.

DHS has designated the nation's 911 systems as critical infrastructure. Critical infrastructure is defined as "systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters."[46]

Resilience is defined as "the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions ... [it] includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents."[47] The COOP plan should be developed and implemented by the 911 authority to assure the resilience of the region's 911 system.

The mission continuity planning cycle involves four distinct yet overlapping phases:

[46] https://www.fema.gov/pdf/about/org/ncp/coop_brochure.pdf
[47] Ibid.


PREVENTION
•Prevention measures are intended to avert or minimize the probability of occurrence and related potential impact of a given hazard. Prevention actions are implemented before an emergency occurs.
PREPAREDNESS
•Preparedness activities are intended to enhance the capacity of an organization to protect itself from the effects of emergency events. Preparedness activities include developing response plans, maintaining situational awareness, acquiring protective equipment, training staff, and conducting drills.
RESPONSE
•Response activities are initiated to address the immediate effects of an emergency through the application of procedures and emergency resources. These activities are intended to protect lives and property, and meet short-term human needs.
RECOVERY
•Recovery operations involve both short- and long-term activities that are intended to restore the 911 program's operational capacity to a pre-disaster condition.

The process used to develop a typical COOP plan includes the following key steps:

- Hazard identification and risk assessment;
- Network security assessment
- Operational impact analysis
- Roles and responsibility identification
- Defining the order of succession for key program personnel
- Identification of prevention and mitigation measures
- Identification of resource capabilities and gaps, and
- Development of incident response and recovery procedures.

The *NENA Managing and Monitoring NG9-1-1 Informational Document*[48] states that the "9-1-1 Authority is encouraged to also consider guidance provided by APCO and NENA to maintain service capability across several areas. Specific targets that should be considered for preparedness, survivability, and sustainability are found in APCO/NENA ANS 1.102.2-2010, Service Capability Criteria Rating Scale [[49]] The Federal Emergency Management Authority *[sic]* (FEMA) also provides guidance and templates that may be of assistance and can be found at the FEMA COOP website [[50]].

"In the process of establishing an NG9-1-1 system, the 9-1-1 Authority should exercise some aspects of the COOP on a more frequent basis (such as monthly or quarterly). Examples of where more frequent exercise of COOP would be appropriate to maintain essential skills and awareness might be:"[51]

- Incident Handling Systems
- Radio Systems
- Policy Routing Rules

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[48] NENA-040.1-2020, *NENA Managing & Monitoring NG9-1-1 Information Document,* August 19, 2020. https://www.nena.org/page/Manage_MonitorNG

[49] This information is provided as a recommended reading in the standard as [5]. Association of Public Safety Communications Officials and National Emergency Number Association. Service Capability Criteria Rating Scale, APCO/NENA ANS 1.102.2-2010. Arlington, VA: NENA, approved July 28, 2010.

[50] This information is provided as a recommended reading in the standard as [6]. Department of Homeland Security, Federal Emergency Management Agency. *Continuity of Operations Plan Template for Federal Departments and Agencies*. Washington DC: FEMA, April 2013.

[51] NENA-040.1-2020, *NENA Managing & Monitoring NG9-1-1 Information Document,* August 19, 2020. https://www.nena.org/page/Manage_MonitorNG

Incident Handling System	Radio Systems	**Policy Routing Rules**
•Simulate incident handling system outage in table top exericise. •Track calls and dispatch incidents in a manual mode (using pen and paper and forms) periodically. •Create standardized forms for documenting 911 information that is reflective of the information documented during normal operations. Forms can be on paper or stored electronically. •Ensure manual forms or computers used for manual operations are easily accessible in the event of an outage or emergency to ensure continuity of operations. •Include provisions for handling an outage of records management systems capability in the COOP plan.	•Periodically simulate impairment of radio operations such as where trunked radio capacity becomes unavailable (e.g., by simulating a failure of radio system function). •Train staff to understand and work with failover capabilities of radio systems and also allow first responders to be ready to operate in a situation where radio communications are impaired.	•Establish a recurring pattern to exercise the Policy Routing Rules. •In legacy and transitional environments, a PSAP may have a backup ingress network for receiving calls. In this case, the PSAP should develop a comprehensive plan to switch to the backup network as part of a periodic process for testing the COOP. •If the PSAP has established inter-jurisdiction agreements in a MOU for receiving calls from another jurisdiction in times of need, an established plan should be followed and regularly exercised to ensure the COOP will work as planned when invoked.

Source: NENA-040.1-2020, *NENA Managing & Monitoring NG9-1-1 Information Document,* August 19, 2020

APPENDIX Q – GEOGRAPHIC INFORMATION SYSTEMS

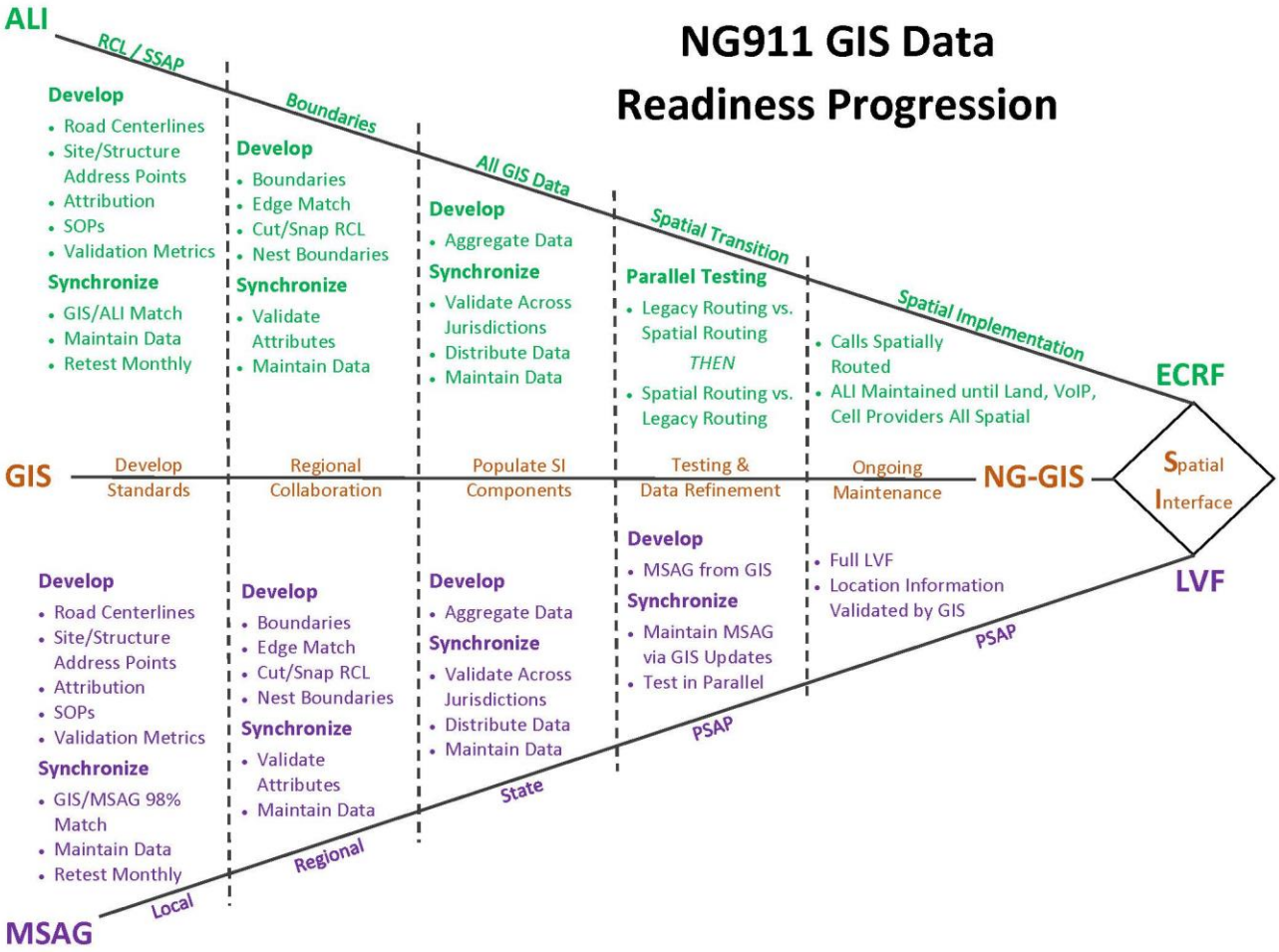
A GIS creates maps and graphics from the information contained in databases built by or used by the jurisdiction. As a foundational element of NG911, geographic data and systems will be heavily relied upon to support the routing of calls to the correct PSAP.

A GIS is far more than just a mapping program. More specifically, it is a complex mix of database management, display technology, and analysis tools that can be used to create maps, solve problems that have a spatial context, and enable processes such as emergency call routing that leverages the locations of features. All information in a GIS is referenced to a location. A GIS can contain images of aerial photography, photographs of homes, floor plans of buildings, and large amounts of text and attribute information, all tied into the databases by their location on the earth's surface. A GIS enables every feature on a map to be represented by points, lines, or polygons. Lines can be streets, pipelines, creeks, and railroads. Points could be fire hydrants, cell tower locations, building structures, or mileposts. Polygons represent areas in a GIS and can be city boundaries, county boundaries, emergency service boundary (ESB) areas, lakes, and others.

This graphic and visualized data on a map enables quick analysis of information, making GIS an invaluable tool for public safety response and situational awareness, by supporting the ability to rapidly assess situations and make decisions. Furthermore, by referencing all GIS data to a location on the earth's surface, precise feature locations can be leveraged to significantly enhance call-routing capabilities.

Chapter 2 of the Interstate Playbook includes detailed information regarding GIS. A link to Chapter 2 can be found at: www.911.gov/pdf/National_911_Program_NG911_Interstate_Playbook_Chapter_2.pdf.

The following diagram illustrates the GIS progression steps from legacy 911 to NG911—the continuum of activities and events required to achieve spatial interface transition from legacy services such as ALI and the MSAG.



Related NENA Reference Documentation

NENA-STA-006.1.1-2020 GIS Data Model for NG911
NENA-STA-012.2-2017 NG911 Additional Data
NENA-STA-004.1-2014 Next Generation US CLDXF
NENA 02-014 GIS and Data Collection Standard
NENA 71-501 Standard for Synchronizing GIS, ALI, MSAG
NENA-INF-014.1-2015 Development of SSAP for 911
NENA-STA-015.10-2018 Standard Data Formats for E911 Data Exchange and GIS Mapping

Figure 4: NG911 GIS Data Progression

Coordinating Multiple Data Sources

In addition to the requirements for local implementation, regional or interstate NG911 programs require a much higher level of GIS coordination. Data from multiple jurisdictions (in this case the military and the local or even state GIS dataset) must be aggregated into a single dataset. This effort will require a process called "edge matching," wherein boundary lines are matched to eliminate situations where two or more polygons claim the same geography, and orphaned areas (geography not claimed by any polygon) and road centerlines are adjusted at boundary lines to maintain continuity across jurisdictions.

These regional implementations can encompass geography from multiple states and now even more data stewards[52]. Interlocal agreements may be required to assist in resolving conflicting laws or to outline financial obligations to help provide budgetary guidance for 911 authorities. These agreements should guide the data stewards regarding data modifications necessary to permit data aggregation.

Update Frequency

The frequency of geospatial file exchange should be determined and agreed upon and documented in an MOA/MOU or IGSA executed between the parties. At times, the frequency of data updates is driven by how much change is occurring in the area or on the military facility.

Process and Workflow

Processes and workflow for the data exchange should be predefined. As this will replace the ALI updates in an MSAG, there are constantly moving targets. For Pierce County and JBLM, geospatial addresses for buildings and points of interest locations on JBLM were incorporated into GIS data at Pierce County and South Sound 911. This integration proved beneficial for response clarity and event documentation—call details necessary to the appropriate recordkeeping of a 911 call impacting Pierce County or JBLM.

GIS Standards and Guidelines

Compliance with NENA recommended standards and guidelines is strongly encouraged. States, regions, and PSAP authorities are encouraged to monitor NENA's website for the most current document updates and release of draft standards or guidelines that may be distributed for public comment.

In addition, annually the National 911 Program compiles all currently approved standards associated with 911. This information is known as *Next Generation 911 (NG911) Standards Identification and Review* and can be found on 911.gov at: https://www.911.gov/documents_tools.html

[52] Data stewards administer an organization's data in compliance with policy and/or regulatory obligations.

APPENDIX R – SUPPORT REFERENCES, RESOURCES, AND RECOMMENDED READING

- Closing the NG911 Gap authored by the Institute for Defense Analyses, May 2019. https://www.ida.org/-/media/feature/publications/d/da/department-of-the-army_closing-the-next-generation-9-1-1-capability-gap/d-10648.ashx
- CSRIC, Final Report – Recommendations for 9-1-1 System Reliability and Resiliency during the NG9-1-1 Transition, Version 2.0 – March 8, 2019 (Addition of Best Practices); https://www.fcc.gov/files/csric6wg1finalreport030819pdf
- Department of Defense (DOD) INSTRUCTION 8523.01 COMMUNICATIONS SECURITY, January 6, 2021 https://fas.org/irp/doddir/dod/i8523_01.pdf
- *DoD's PSAP Pilot Project Aims to Improve Communications During Military Incidents,* 911,gov Connects, Issue 4. https://www.911.gov/911connects/issue-4/DoDs-PSAP-Pilot-Project-Aims-to-Improve-Communication-During-Military-Incidents.html
- FEMA Continuity of Operations Plan Template and Instructions for Federal Departments and Agencies July 2011 https://www.fema.gov/pdf/about/org/ncp/coop/continuity_plan_federal_d_a.pdf
- FCC Amendments to Part 4 of the Commission's Rules Concerning Disruptions to Communications, PS Docket No. 15-80, Second Report and Order https://www.fcc.gov/document/fcc-share-communications-outage-info-federal-state-agencies-0
- FEMA "Continuity Guidance Circular." Federal Emergency Management Agency, FEMA National Continuity Programs, February 2018. https://www.fema.gov/sites/default/files/2020-07/Continuity-Guidance-Circular_031218.pdf
- FCC Task Force on Optimal PSAP Architecture, *Adopted Final Report*, January 29, 2016
- FCC TFOPA, Working Group 2: Optimal Approach to NG91-1-1 Implementation, Final
- FCC TFOPA, Working Group 2: Optimal Approach to NG91-1-1 Implementation, Supplemental Report, December 2, 2016
- FCC PSAP Registry, https://www.fcc.gov/general/9-1-1-master-psap-registry.
- International Organization for Standardization, ISO 20000, https://en.wikipedia.org/wiki/ISO/IEC_20000
- International Technology Service Management (ITSM) definition of Change Management, https://en.wikipedia.org/wiki/Change_management_(ITSM)
- Kari's Law, Ray BAUMS Act and Dispatchable Location educational materials and interactive assessment tool: https://www.911.gov/project_mltsdispatchablelocation.html
- *Military and Civilian Collaborations in Deploying Next-Generation 9-1-1*, July 2019, Institute for Defense Analyses. https://www.ida.org/research-and-publications/publications/all/m/mi/military-and-civilian-collaborations-in-deploying-next-generation-9-1-1

- Military Dictionary of Terms
  "As directed in Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States,* the *DOD Dictionary of Military and Associated Terms (DOD Dictionary)* sets forth standard US military and associated terminology to encompass the joint activity of the Armed Forces of the United States."[53] A link to the dictionary can be found at: https://www.jcs.mil/doctrine/dod_dictionary/#:~:text=DOD%20Dictionary%20of%20Military%20and%20Associated%20Terms%2C%20June,of%20the%20Armed%20Forces%20of%20the%20United%20States.
- National 911 Program, *Next Generation 911 Interstate Playbook*, https://www.911.gov/project_nextgeneration911interstateplaybook.html
- National 911 Program, Interstate Playbook, Chapter 2 www.911.gov/pdf/National_911_Program_NG911_Interstate_Playbook_Chapter_2.pdf
- National 911 Program Standards Identification and Review and can be found on 911.gov at: https://www.911.gov/pdf/National_911_Program_NG911_Standards_Identification_Analysis_2020.pdf
- National 911 Program, Next Generation 911 Self-Assessment Tool, https://www.911.gov/project_ng911tool.html
- NENA Enhanced PSAP Registry and Census: 911eprc@nena.org.
- NENA Informational Document, Changing Role of the 911 Telecommunicator
- NENA Potential Points of Demarcation in NG9-1-1 Networks Information Document, NENA-INF-003.1-2013, 03/21/2013, https://cdn.ymaws.com/www.nena.org/resource/resmgr/Standards/NENA-INF-003.1.1-2013_Potent.pdf
- NENA/APCO Next Generation 911 Public Safety Answering Point Requirements, April 5, 2018.
- NENA Master Glossary of 9-1-1 Terminology, NENA-ADM-000.23-2020, January 20, 2020, https://www.nena.org/page/Glossary
- NENA-INF-016.2-2018 (originally 08-506), April 5, 2018 Next Generation 911 Cost Estimate A Report to Congress, October 2018, https://www.911.gov/pdf/Next_Generation_911_Cost_Estimate_Report_to_Congress_2018.pdf
- PRF NENA TOOLS, https://www.nena.org/page/PRR_OptnsGuide
- *Protecting the Force, Lessons from Fort Hood*, Report of the DoD Independent Review, January 2010. https://apps.dtic.mil/docs/citations/ADA513143
- Recommended 911 Minimum Training for Telecommunicators. 911.gov. https://www.911.gov/project_recommended911minimumtrainingfortelecommunicators.html
- Title 38 – Militia and Military Affairs; Chapter 52 – Emergency Management. https://mil.wa.gov/laws-and-regulations

[53] "DOD Dictionary of Military and Associated Terms, June 2020." Joint Electronic Library, Joint Chiefs of Staff.